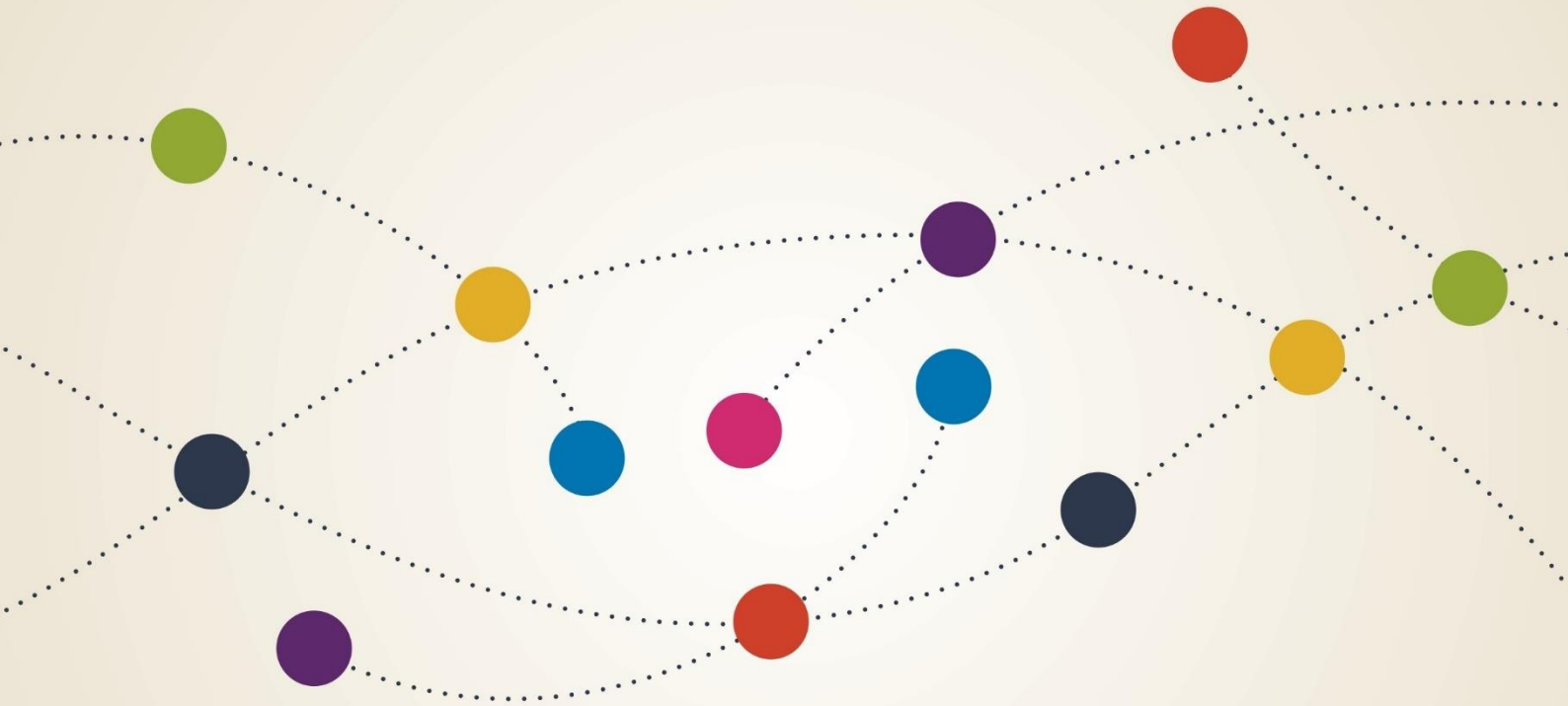

Education for Sustainable Development:

A study of opportunities and linkages in the primary and post-primary curriculum

NCCA
An Chomhairle Náisiúnta Curaclaim agus Measúnachta
National Council for Curriculum and Assessment

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1. Setting the scene

1.1 Sustainable Development Goals

The 2030 Agenda for Sustainable Development, adopted by the United Nations General Assembly in September 2015, is a plan of action for people, planet, prosperity and peace. It is a universal, global framework to deal with the major development and environmental challenges facing humanity and our planet.

The Agenda incorporates seventeen Sustainable Development Goals with 169 targets, to be achieved by the year 2030. The 17 Goals are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. The Goals are universal, meaning that all countries and all people have a responsibility to act to realise the Goals, both at home and overseas.

Taken together, the seventeen Goals and 169 targets represent an ambitious but imperative plan to secure a sustainable, peaceful, prosperous and equitable life for all people, everywhere, now and in the future, incorporating a commitment to leave no one behind. Agenda 2030 represents a commitment by the signatory countries around the world to work together in partnership to:

- tackle poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment
- protect the planet from degradation, including through sustainable consumption and production, sustainably manage its natural resources and take urgent action on climate change
- ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature
- foster peaceful, just and inclusive societies which are free from fear and violence (United Nations, 2015).

The Sustainable Development Goals

1. **No Poverty:** End poverty in all its forms everywhere
2. **Zero Hunger:** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3. **Good Health and Well-being:** Ensure healthy lives and promote wellbeing for all at all ages
4. **Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. **Gender Equality:** Achieve gender equality and empower all women and girls
6. **Clean Water and Sanitation:** Ensure availability and sustainable management of water and sanitation for all
7. **Affordable and Clean Energy:** Ensure access to affordable, reliable, sustainable and modern energy for all
8. **Decent Work and Economic Growth:** Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
9. **Industry, Innovation and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation
10. **Reduced Inequalities:** Reduce inequality within and among countries
11. **Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient and sustainable
12. **Responsible Consumption and Production:** Ensure sustainable consumption and production patterns
13. **Climate Action:** Take urgent action to combat climate change and its impacts
14. **Life below Water:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. **Life on Land:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss
16. **Peace and Justice, Strong Institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. **Partnership for the Goals:** Strengthen the means of implementation and revitalise the global partnership for sustainable development

Table 1 The seventeen Sustainable Development Goals

Figure 1 The Sustainable Development Goals icons

1.2 National Strategy on Education for Sustainable Development

Ireland's National Strategy on Education for Sustainable Development (2014-2020) aims to ensure that our education system contributes to sustainable development by:

> *…equipping learners with the relevant knowledge (the 'what'), the key dispositions and skills (the 'how') and the values (the 'why') that will motivate and empower them throughout their lives to become informed active citizens who take action for a more sustainable future (DES, 2014: 3).*

This aim reflects the long-standing tradition and aims of Development Education (DE) in Ireland, and indeed of other relevant 'adjectival' educations, such as global citizenship education, human rights education, intercultural education. DE and ESD are very similar in terms of content, methodology, ideology and commitment to action for positive change, and these synergies create a situation where stakeholders from a variety of backgrounds and with a variety of agendas can work together towards realisation of the recommendations outlined in the strategy document (Hogan & Tormey, 2008).

The National Strategy on Education for Sustainable Development was published by the Department of Education and Skills towards the conclusion of the United Nations Decade of Education for Sustainable Development (2005-2014). The document draws on consultation with stakeholders and key policy documents, including its parent strategy, *Our Sustainable Future: A framework for sustainable development for Ireland*.

Although the Education for Sustainable Development strategy predates Agenda 2030, it articulates a series of recommendations which can help to empower learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations. Additionally, the important role of Education for Sustainable Development is acknowledged in Goal 4 (Quality Education), target 4.7 of Agenda 2030:

> *By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development (United Nations, 2015).*

Education for Sustainable Development is therefore recognised at an international level, as being an essential contributor to all efforts to achieve the Sustainable Development Goals.

The national strategy embraces a vision of Education for Sustainable Development that is proactive and transformational, *for* as well as *about* sustainable development. The national strategy is based on the following key aims or principles:

Key principles underpinning the National Strategy for Education for Sustainable Development (2014-2020)

- balance environmental, social and economic considerations
- promote lifelong learning
- be locally relevant while also linking the local to the national and international
- engage all sectors of the education system, as well as the non-formal education sector
- be interdisciplinary and recognise interdependence and interconnectivities across other sectors
- use a variety of pedagogical techniques that promote active and participatory learning and the development of key dispositions and skills
- emphasise social justice and equity
- focus on values and promote active democratic citizenship and inclusion as a means of empowering the individual and the community
- be an agent for positive change in reorienting societies towards sustainable development

(DES, 2014: 4)

Table 2 Key principles underpinning the National Strategy on Education for Sustainable Development

1.3 Purpose and target audience

The National Strategy for Education for Sustainable Development outlines eight priority action areas, identified as key to the achievement of the overall aim of equipping learners with the knowledge, skills and values 'to become informed active citizens who take action for a more sustainable future' (DES, 2014: 3).

Priority action areas in the National Strategy for Education for Sustainable Development
1. Leadership and coordination
2. Data collection and baseline measurement
3. Curriculum at pre-school, primary and post primary
4. Professional development
5. Further Education and Training
6. Higher Education and Research
7. Promoting participation by young people.
8. Sustainability in action
(DES, 2014: 4)

Table 3 Priority action areas in the National Strategy for Education for Sustainable Development

The purpose of this study is to realise Recommendation 6 of the national strategy, which is specific to priority action area 3: Curriculum at pre-school, primary and post primary.

Recommendation 6
The NCCA [National Council for Curriculum and Assessment] should be asked to audit, from a sustainable development perspective, the primary and post primary curriculum by 2017. The audit should identify opportunities for building on existing practice and should identify potential linkages between different subject areas in primary and post primary schools. The results of the audit should be published by the Department of Education and Skills.
(DES, 2014: 13)

The National Council for Curriculum and Assessment (NCCA) is a statutory body which advises the Minister for Education and Skills on:

- curriculum and assessment for early childhood education, primary and post-primary schools.
- assessment procedures used in schools and examinations on subjects which are part of the curriculum.

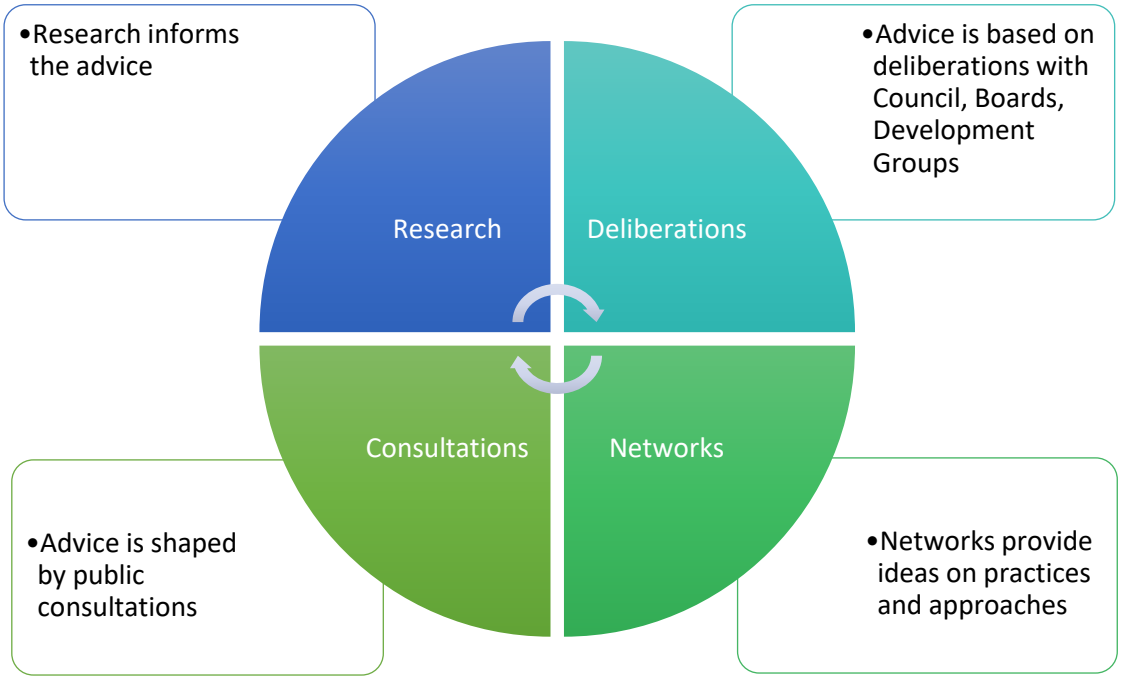


Figure 2 Overview of NCCA's areas of activity

This NCCA study is a snapshot of the opportunities for building on existing curriculum practice and potential linkages for Education for Sustainable Development in primary (including Aistear, the early childhood curriculum framework), and the post primary junior and senior cycle curriculum documentation.[1] It is important to note that as plans for curriculum reform and review are realised across the various educational sectors, ESD opportunities and linkages will change and hopefully improve.

The target audience for this study are the stakeholders such as:

- Department of Education and Skills

[1] For an overview of the formal education system in Ireland see DES, 2004. *A brief description of the Irish Education system*. Available: https://www.education.ie/en/Publications/Education-Reports/A-Brief-Description-of-the-Irish-Education-System.pdf

- National Council for Curriculum and Assessment
- Individuals and organisations engaged in curriculum resource development or curriculum support, such as additional government departments, civil society organisations/non-governmental organisations etc.

This document is not intended for teachers in the classroom, although it will certainly be of use to teacher educators, for example, those involved in the DICE (primary) or Ubuntu (post-primary) Networks, non-governmental/civil society organisations offering teacher training or DES personnel involved in teacher continuing professional development, such as those working with the Department of Education and Skills' Professional Development Service for Teachers (PDST) or Junior Cycle for Teachers (JCT).

1.4 Structure of study

The NCCA has chosen to activate Recommendation 6 from the National Strategy on Education for Sustainable Development using a two-step approach to examining key curriculum documentation.

Step One:

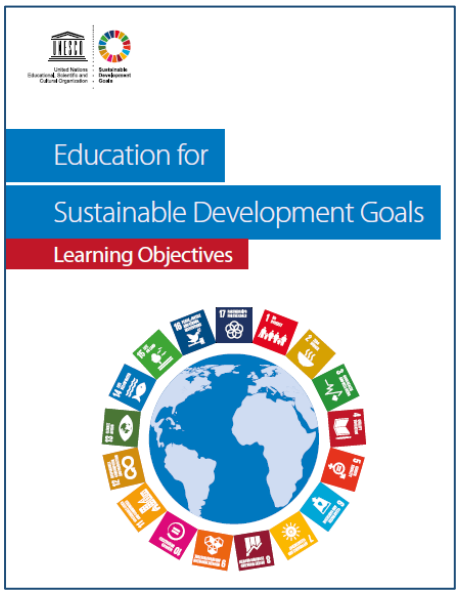


Figure 3 UNESCO's Education for Sustainable Development Goals: Learning Objectives

This study maps high-level curriculum frameworks in Ireland from early childhood to post-primary to eight cross-cutting key competencies for sustainability, relevant to all the Sustainable Development Goals, as outlined in a UNESCO publication entitled *Education for Sustainable Development Goals: Learning Objectives* (UNESCO, 2017: 10).

The UNESCO key competencies 'are necessary for all learners of all ages worldwide' and are viewed as 'transversal, multifunctional and context-dependent' (UNESCO, 2017: 10). They represent internationally recognised standards in relation to learner acquisition of higher order skills, dispositions and values, and so provide a useful comparative tool for looking at the development of curriculum frameworks in the Irish context.

UNESCO's cross-cutting key competencies for sustainability

- **Systems thinking:** the ability to recognize and understand relationships; to analyse complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty.
- **Anticipatory competency:** the ability to understand and evaluate multiple futures – possible, probably and desirable; to create one's own visions for the future; to apply the precautionary principle; to assess the consequences of actions, and to deal with risks and changes.
- **Normative competency:** the abilities to understand and reflect on the norms and values that underlie one's actions and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interest and trade-offs, uncertain knowledge and contradictions.
- **Strategic competency:** the abilities to collectively develop and implement innovative actions that further sustainability at the local level and further afield.
- **Collaboration:** the abilities to learn from others; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to and be sensitive to others (empathetic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem solving.
- **Critical thinking:** the ability to question norms, practices and opinions; to reflect on one's own values, perceptions and actions; and to take a position in the sustainability discourse.
- **Self-awareness:** the ability to reflect on one's own role in the local community and (global) society; to continually evaluate and further motivate one's actions; and to deal with one's feelings and desires.
- **Integrated problem-solving:** the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solutions that promote sustainable development, integrating the other competencies.

(UNESCO, 2017: 10)

Table 4 UNESCO's key competencies for sustainability

Step Two:

This study includes case studies of curricular components from primary, junior and senior cycle levels. These case studies identify the aspect of the rationale and aim/objectives of the specific subject or short course which are in keeping with the spirit and intent of ESD. Case studies also highlight sample learning objectives (primary) or outcomes (junior/senior cycle) which provide opportunities for teaching and learning about one or more Sustainable Development Goal.

Case studies have been selected using a set of criteria.

Criteria for inclusion of case studies

Case studies should:

- Include sample curriculum elements from each level (e.g. primary, junior cycle and senior cycle)
- Provide a balance between standalone curriculum elements and those with continuity between levels
- Prioritize those that have been recently revised (with some exceptions)
- Provide a balance between curriculum elements with content explicitly relevant to the Sustainable Development Goals and those less explicit in terms of content
- Provide a balance between curriculum elements with natural links to the economic, environmental and social dimensions of sustainable development

Table 5 Criteria for inclusion of case studies

Although this study is a direct response to Recommendation 6 in the National Strategy on Education for Sustainable Development, the methodology employed means that this document also records progress as well as identifying the remaining work to be done in relation to Recommendation 7 from the strategy. It is with Recommendation 7 in mind, that this study emphasises recent post primary curriculum developments, particularly at junior cycle level.

Recommendation 7

The DES [Department of Education and Skills] and NCCA should ensure that ESD principles are integrated into all relevant primary and post primary curriculum areas as the curriculum is reviewed, where this is appropriate. This includes the primary school curriculum, the new specifications for the Junior Cycle [Profile of Achievement], and the senior cycle curriculum.

(DES, 2014: 13)

This two-step approach facilitates an interrogation of curriculum frameworks and syllabus/specification documents to uncover what the NCCA has been doing well in relation to ESD and where it could do better or improve. It is intended that the resulting recommendations will help to ensure that good practice in relation to ESD opportunities and linkages be taken on board in ongoing and future curriculum reform and review, and in the development of a National Strategy for Education for Sustainable Development beyond 2020.

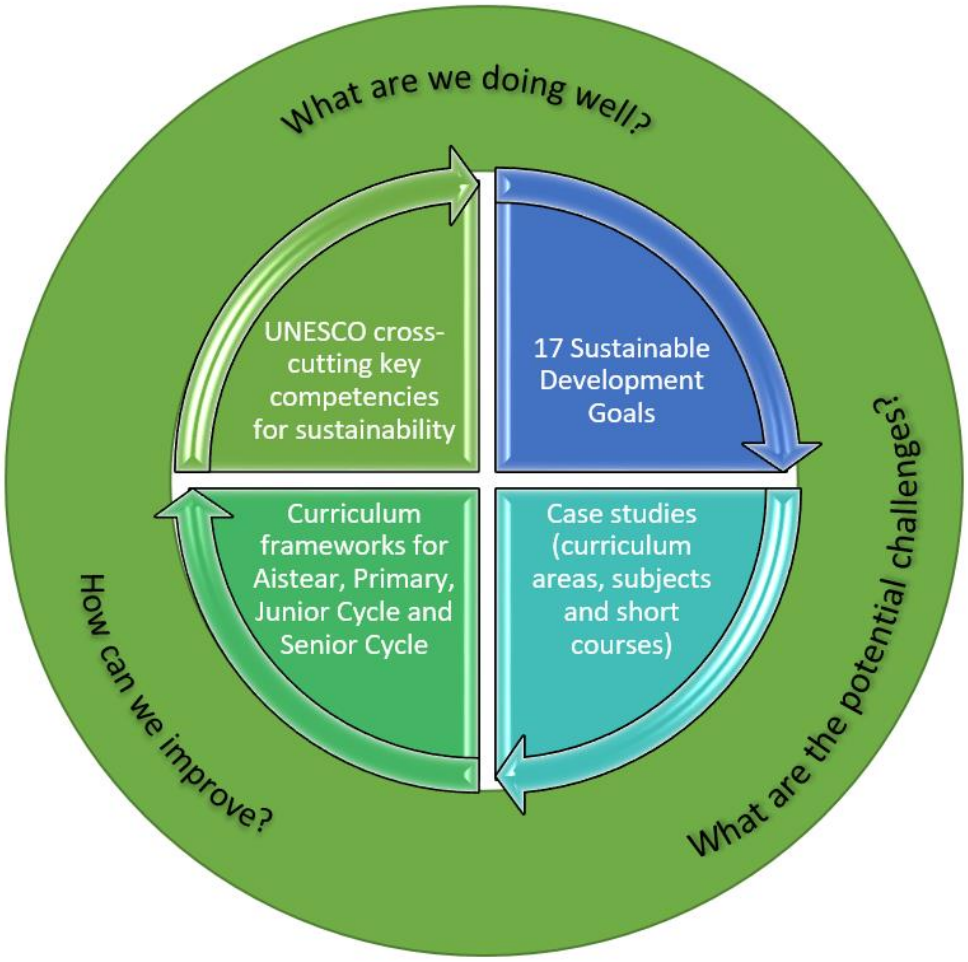


Figure 4 NCCA's approach to the ESD opportunities and linkages study

2. Curriculum Frameworks

2.1 Aistear, the Early Childhood Curriculum Framework

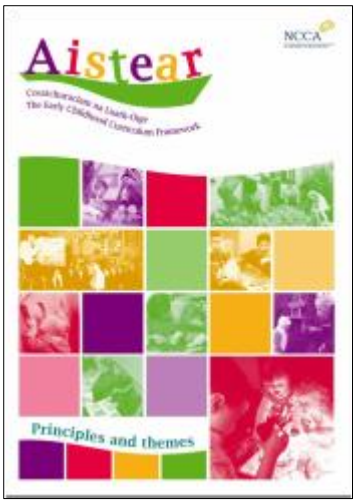


Figure 5 Aistear, the early childhood curriculum framework

Aistear is the early childhood curriculum for all children in Ireland from birth to six years. It can be used to support the learning and development of all children in a variety of settings – at home, in full time and part time day care settings, in preschools and in the first two years of primary school.[2] Aistear was developed by the NCCA in consultation with the early childhood sector and was published in late 2009.

Aistear prioritises the building of healthy relationships and highlights the centrality of play, especially outdoor play, during early childhood. Aistear sees children as competent and confident with views that are worth listening to, and its themes set out the skills, dispositions, attitudes and values, knowledge and understanding that children need to achieve their full potential. Adults are encouraged to listen and respond to the views of babies, toddlers and young children as they plan for learning and create play rich spaces.

The framework is based on 12 principles of early learning and development:

Group 1: Children and their lives in early childhood	Group 2: Children's connections with others	Group 3: How children learn and develop
The child's uniqueness	Relationships	Holistic learning and development
Equality and diversity	Parents, family and community	Active learning
Children as citizens	The adult's role	Play and hands-on experiences Relevant and meaningful experiences Communication and language The learning environment

[2] Many children start attending school before the compulsory starting age of six.

In the context of Education for Sustainable Development, the principle of 'children as citizens' is particularly important:

Aistear Principle - Children as citizens

Children are citizens with rights and responsibilities. They have opinions that are worth listening to and have the right to be involved in decisions about matters that affect them. In this way, they have a right to experience democracy. From this experience they learn that, as well as having rights, they also have a responsibility to respect and help others, and to care for their environment.

All Aistear principles are outlined from the child's perspective, and for the 'child as citizen' principle the ESD relevant aspects of the interpretation are:

- *Remember that I too am a citizen. Help me to learn about my rights and responsibilities. Model fairness, justice, and respect when you interact with me and others.*
- *Create an environment for me in which I feel confident and comfortable and have opportunities to share my experiences, stories, ideas, and feelings. Model democracy in action. Involve me in making decisions and in planning activities and doing and reflecting on them with others.*
- *Let me share my views and opinions with you about things that matter to me. Help me to understand that others may have different views and opinions, and to respect these. As I communicate in different ways, this might mean you need to observe and interpret my facial expression, body movements, gurgles, cries, moods, and my language(s).*
- *Encourage me to care for my own and others' belongings and for the environment.*

The Aistear framework is organized around four interconnected themes, which are used to describe learning and development. The themes are *Wellbeing, Identity and Belonging, Communicating, Exploring and Thinking*. Each theme has four broad aims and each aim has six learning goals.

Figure 6 Aistear framework components

Aistear themes

Well-being

Wellbeing is about children being confident, happy and healthy. This theme focuses on developing as a person and has two main elements: psychological well-being (including thinking and feeling) and physical well-being.

Identity and Belonging

Identity and Belonging is about children developing a positive sense of who they are and feeling that they are valued and respected as part of a family and community.

Communicating

Communicating is about children sharing their experiences, thoughts, ideas, and feelings with growing confidence and competence in a variety of ways and for a variety of purposes.

Exploring and Thinking

Exploring and Thinking is about children making sense of the things, places and people in their world by interacting with others, playing, investigating, questioning, and forming, testing and refining ideas.

Table 6 Aistear's themes

When the broad aims of each of the four Aistear themes are mapped against UNESCO's cross-cutting key competencies for sustainability, it emerges that the framework provides opportunities for babies, toddlers and children to gain all the key competencies for sustainability, albeit in age appropriate ways. The most opportunities are afforded to the competency of self-awareness, followed by collaboration, then the normative competency, followed jointly by the critical thinking and anticipatory competencies. There are fewest opportunities to gain systems thinking and integrated-problem solving competencies, perhaps unsurprisingly given the 0-6 years age-range covered by the Aistear framework. The Aistear theme which presents the most opportunities to gain key competencies for sustainability is Exploring and Thinking.

To better comprehend the range of opportunities for key competencies for sustainability in Aistear, it is useful to look at Exploring and Thinking, as the theme which presents the most opportunity for engagement. The aims and learning goals of Exploring and Thinking, which offer opportunities for children to gain key competencies for sustainability are presented below:

Aim 1: Children will learn about and make sense of the world around them.

<u>Sample</u> aim 1 learning goals

In partnership with the adult, children will:

- demonstrate a growing understanding of themselves and others in their community (normative, collaboration & self-awareness competencies)
- develop an understanding of change as part of their lives (anticipatory competency)
- learn about the natural environment and its features, materials, animals, and plants, and their own responsibility as carers (self-awareness competency)

Aim 2: Children will develop and use skills and strategies for observing, questioning, investigating, understanding, negotiating, and problem-solving, and come to see themselves as explorers and thinkers.

<u>Sample</u> aim 2 learning goals

In partnership with the adult, children will:

- recognise patterns and make connections and associations between new learning and what they already know (systems thinking competency)
- use their experience and information to explore and develop working theories about how the world works, and think about how and why they learn things (critical thinking competency)

- collaborate with others to share interests and to solve problems confidently (collaboration competency)
- use their creativity and imagination to think of new ways to solve problems (integrated problem-solving)

Aim 3: Children will explore ways to represent ideas, feelings, thoughts, objects, and action through symbols.

<u>Sample</u> aim 3 learning goal

In partnership with the adult, children will:

- use letters, words, sentences, numbers, signs, pictures, colour, and shapes to give and record information, to describe and to make sense of their own and others' experiences (self-awareness & collaboration competencies)

Aim 4: Children will have positive attitudes toward learning and develop dispositions like curiosity, playfulness, perseverance, confidence, resourcefulness, and risk-taking

<u>Sample</u> aim 4 learning goals

In partnership with the adult, children will:

- develop higher-order thinking skills such as problem-solving, predicting, analysing, questioning, and justifying (systems thinking & anticipatory competencies)
- act on their curiosity, take risks and be open to new ideas and uncertainty (anticipatory competency)

Over time, as the use of the Aistear framework is increasingly embedded in practice in the range of settings for children under the age of six years, children should increasingly be presented with curriculum-based opportunities to encounter key competencies for sustainability.

2.2 Primary curriculum introduction

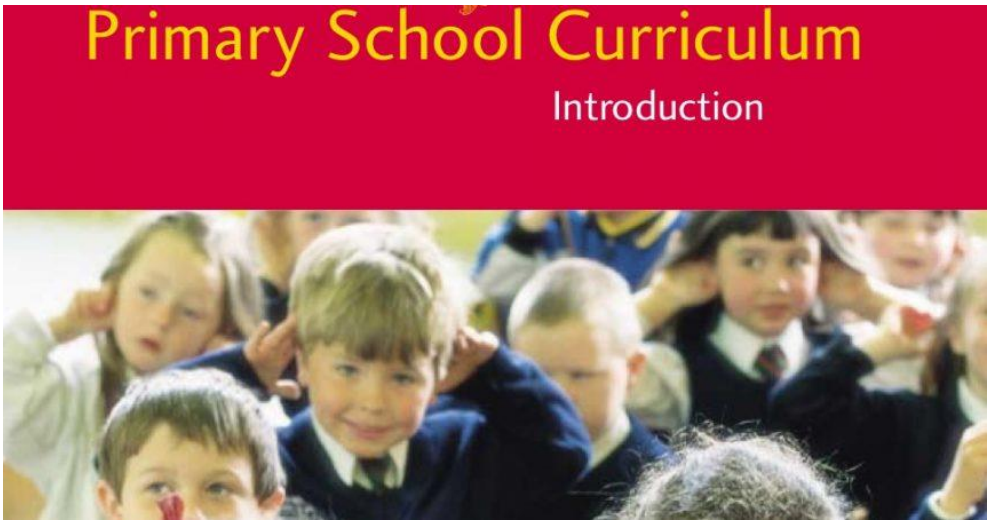


Figure 7 Primary school curriculum introduction

For the purposes of this study, the introduction to the 1999 primary curriculum represents the 'framework' at primary level. This curriculum document outlines an overall vision for primary education which enables 'children to meet, with self-confidence and assurance, the demands of life, both now and in the future' (DES, 1999a: 6).

This vision of education is expressed in the form of three general aims, the second of which most obviously resonates the spirit and intent of Education for Sustainable Development:

- to enable the child to live a full life as a child and to realise his or her potential as a unique individual
- to enable the child to develop as a social being through living and cooperating with others and so contribute to the good of society
- to prepare the child for further education and lifelong learning

The framework includes an acknowledgement that:

> *…children live in and are a part of society, and that their personal development is deeply affected by their relationships in the home and with other people in society. The curriculum takes full account of these aspects of the child's life in seeking to balance individual and social development, in developing an appreciation of how the different dimensions of life complement each other, and in helping the child to work co-operatively with others. (DES, 1999a: 6)*

One of the key issues identified in the lead up to the publication of the introduction to primary education in 1999 was European and global dimensions. To address these issues the framework articulated the need to recognise:

> *…the importance of a balanced and informed awareness of the diversity of peoples and environments in the world. Such an awareness helps children to understand the world and contributes to their personal and social development as citizens of a global community (DES, 1999a: 27)*

The document outlines 11 specific aims and 25 general objectives for primary education. When the UNESCO key competencies for sustainability are mapped against these specific aims and general objectives the self-awareness, system thinking, and collaboration key competencies are relevant (in order of descending relevance), for example:

Sample specific aim:

- To enable children to develop personally and socially and to relate to others with understanding and respect (collaboration and self-awareness competencies)
- To enable children to develop skills and understanding in order to study their world and its inhabitants and appreciate the interrelationships between them (systems thinking competency)

The specific aims provide some limited opportunities vis-à-vis integrated problem solving, but there is very little opportunity in relation to the critical thinking, strategic and anticipatory competencies, and no evident opportunities for the normative competency.

The gap in relation to the normative capacity is dealt with, in a limited sense in one of the 25 general objectives, namely:

- The child should be enabled to develop self-discipline, a sense of personal and social responsibility, and an awareness of society and morally acceptable behaviour (normative and self-awareness competencies)

However, the general objectives provide no obvious opportunities for pupils to encounter anticipatory, strategic and critical thinking competencies.

While it is important to highlight that that the aims and objectives outlined in some primary subject curriculum documents pick up on competencies that are less/not evident in the primary 'framework', greater evidence of ESD and ESD alignment between high level curriculum frameworks and subject specifications (see page 40) is the optimal situation. This is particularly relevant in the context of planned developments in the primary curriculum in coming years.

The Primary School Curriculum has provided a strong foundation for teaching and learning since it was published in 1999. Recently, research, reviews and evaluations have highlighted many strengths of the curriculum as well as challenges. In December 2016, NCCA published proposals to redevelop the primary school curriculum focusing on how the curriculum should be structured and how time would be allocated to the various areas of learning. In 2017, the NCCA consulted with interested stakeholders on the structure of the 1999 curriculum and how time was allocated within it. Building on the outcomes of this consultation (NCCA, 2018) the NCCA has begun a review of the primary curriculum. The process of review will provide opportunities for further consultation. In 2018 the NCCA will begin with the construction of an overview of a redeveloped primary curriculum, which will act as framework for the future curriculum. This process of redevelopment will provide opportunities for further consultation and engagement with the public on the content of a future primary curriculum and may provide further opportunities to outline the scope for ESD within it.

2.3 Junior cycle framework

In 2015, the Department of Education and Skills published the *Framework for Junior Cycle 2015*.

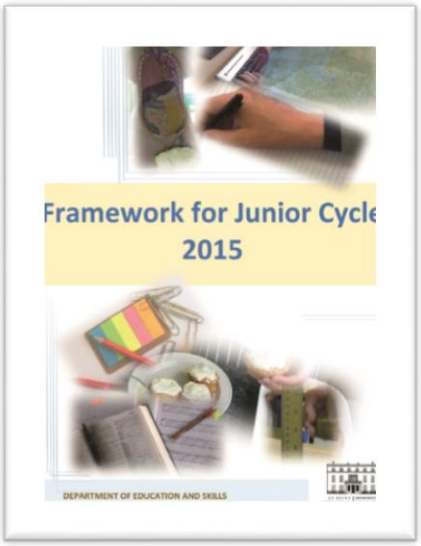


Figure 8 Framework for Junior Cycle 2015

> *The Framework for Junior Cycle (2015) incorporates a shared understanding of how teaching, learning and assessment practices should evolve to support the delivery of a quality, inclusive and relevant education that will meet the needs of junior cycle students, both now and in the future.*
>
> Framework for Junior Cycle (2015, p. 6)

This framework document explains the structure of the reformed junior cycle programme, which is underpinned by eight principles, twenty-four statements of learning, and eight key skills.

Principles

The eight principles which form the bases of the junior cycle curriculum framework are presented in Figure 9. In Table 7 overleaf the principles relevant to the spirit and intent of Education for Sustainable Development are further elaborated.

Figure 9 Principles of junior cycle

Junior cycle principles with explicit ESD relevance
Learning to learn: high quality curriculum, assessment and teaching and learning support students in developing greater independence in learning and in meeting the challenges of life beyond school, of further education, and of working life.
Creativity and innovation: curriculum, assessment, teaching and learning provide opportunities for students to be creative and innovative.
Engagement and participation: The experience of curriculum, assessment, teaching and learning encourages participation, generates engagement and enthusiasm, and connects with life outside the school.
Wellbeing: The student experience contributes directly to their physical, mental, emotional and social wellbeing and resilience. Learning takes place in a climate focused on collective wellbeing of school, community and society.

Table 7 Junior cycle principles with explicit ESD relevance

Statements of Learning

The *Framework for Junior Cycle 2015* provides detail about the 24 statements of learning that are central to planning for, the students' experience of, and the evaluation of the school's junior cycle programme.

	The student
1	communicates effectively using a variety of means in a range of contexts in L1*
2	listens, speaks, reads and writes in L2* and one other language at a level of proficiency that is appropriate to her or his ability
3	creates, appreciates and critically interprets a wide range of texts
4	creates and presents artistic works and appreciates the process and skills involved
5	has an awareness of personal values and an understanding of the process of moral decision making
6	appreciates and respects how diverse values, beliefs and traditions have contributed to the communities and culture in which she/he lives
7	values what it means to be an active citizen, with rights and responsibilities in local and wider contexts
8	values local, national and international heritage, understands the importance of the relationship between past and current events and the forces that drive change
9	understands the origins and impacts of social, economic, and environmental aspects of the world around her/him
10	has the awareness, knowledge, skills, values and motivation to live sustainably
11	takes action to safeguard and promote her/his wellbeing and that of others
12	is a confident and competent participant in physical activity and is motivated to be physically active
13	understands the importance of food and diet in making healthy lifestyle choices
14	makes informed financial decisions and develops good consumer skills
15	recognises the potential uses of mathematical knowledge, skills and understanding in all areas of learning
16	describes, illustrates, interprets, predicts and explains patterns and relationships
17	devises and evaluates strategies for investigating and solving problems using mathematical knowledge, reasoning and skills
18	observes and evaluates empirical events and processes and draws valid deductions and conclusions
19	values the role and contribution of science and technology to society, and their personal, social and global importance
20	uses appropriate technologies in meeting a design challenge
21	applies practical skills as she/he develop models and products using a variety of materials and technologies
22	takes initiative, is innovative and develops entrepreneurial skills
23	brings an idea from conception to realisation
24	uses technology and digital media tools to learn, communicate, work and think collaboratively and creatively in a responsible and ethical manner

Figure 10 Twenty-four statements of learning for junior cycle

Students encounter opportunities to attain UNESCO's eight key competencies for sustainability through six junior cycle statements of learning. These six are presented below in four groups in descending order of opportunity, i.e. Statement of Learning 10 provides the most opportunity to attain the key competencies, followed by Statement of Learning 7, then Statements of Learning 5 and 6, and lastly Statements of Learning 11 and 16.

Junior cycle statements of learning with relevance for the UNESCO key competencies for sustainability (in descending order of relevance)
Group One
SoL 10: has the awareness, knowledge, skills, values and motivation to live sustainably
Group Two
SoL 7: values what it means to be an active citizen, with rights and responsibilities in local and wider contexts
Group Three
SoL 5: has an awareness of personal values and an understanding of the process of moral decision making
SoL 6: appreciates and respects how diverse values, beliefs and traditions have contributed to the communities and cultures in which she/he lives
Group Four
SoL 11: takes action to safeguard and prompt her/his wellbeing and that of others
SoL 16: describes, illustrates, interprets, predicts and explains patterns and relationships

Table 8 Junior cycle statements of learning with relevance to UNESCO key competencies for sustainability (in descending order of relevance)

Statement of Learning 10 is the equivalent of UNESCO's integrated problem-solving competency, insofar it is very broad and can be used as a catch-all or a type of 'safety net' when no other obvious opportunities can be identified in the mapping between Statements of Learning and UNESCO key competencies. As a theoretical exercise, it is useful to point out that in the absence of Statement of Learning 10, there would be little or no opportunities for the following aspects of the UNESCO key competencies:

Systems thinking – how systems are embedded within different domains and different scales

Anticipatory – applying the cautionary principle; assessing the consequences of actions; dealing with risks and changes

Collaboration – deals with conflicts in a group (although this is covered in depth through the junior cycle key skill of 'working with others', see page 28)

Critical thinking – take a position in the sustainability discourse

The key competencies for sustainability are not reflected in Statements of Learning (L1) and 2 (L2), but this is largely because as high-level competencies, the UNESCO competencies assume that learners

have a pre-existing set of competencies which would be foundational in nature (e.g. basic literacy). Language acquisition and the ability to communicate within and across language/culture groups can be taken to implicitly underpin most, if not all, of the key competencies.

Otherwise, Statement of Learning 4 (creates and presents artistic works and appreciates the process and skill involved) and Statement of Learning 12 (is a confident and competent participant in physical activity and is motivated to be physically active) are the only two remaining Statements of Learning which cannot be explicitly mapped onto the UNESCO competencies.

The mapping exercise points to a possible further explanation of Statement of Learning 4 – to a statement that is not just about creating, presenting and appreciating but also highlights the importance of participation in artistic works as a way of raising awareness, engaging with real world issues and problem-solving. As it currently stands, Statement of Learning 4 is not a full articulation of the ESD possibilities presented in its relevant curriculum components, such as junior cycle Visual Art, Music and Home Economics.

Although it cannot be explicitly mapped onto the UNESCO competencies, Statement of Learning 12 is less in need of revision (is a confident and competent participant in physical activity and is motivated to be physically active), largely because Statement of Learning 11 (wellbeing of self and others) which can be clearly linked to Physical Education (PE), is amongst the Statements of Learning which can be explicitly linked to the UNESCO competencies.

As 'new' junior cycle specifications are implemented in the three years of junior cycle and become part of the curriculum as experienced, it would be useful to interrogate the explanations of learning experiences for statements of learning (contained in Appendix, Framework for Junior Cycle 2015, pages 51-58). This would have the effect of ensuring that the explanations fully and faithfully capture the types of learning and acquisition of ESD competencies happening in relation to all statements of learning and in various subject/short course classrooms.

The mapping of the UNESCO key competencies onto the junior cycle Statements of Learning has flagged a limitation with the wording of Statement of Learning 19 (values the role and contribution of science and technology to society, and their personal and global importance). This limitation is less problematic than the gap identified in Statement of Learning 4, for example, because although Statement of Learning 19 refers to 'science and technology' at a remove from the student – the further articulation of Statement of Learning 19 in the appendices of *Framework for Junior Cycle 2015* discusses the idea that students can use their knowledge of science and technology to help to make informed decisions and choices (DES, 2015a: 57).

Key skills

The Framework for junior cycle sets out the eight key skills that are required for successful learning by all students. Throughout the Junior Cycle, students develop their proficiency in these eight key skills across the curriculum. Students engage with the key skills through their different learning experiences and in the assessment approaches used in the classroom and in examinations. These skills are key to learning in every area of junior cycle and beyond.

Figure 11 Junior cycle key skills

Each key skill is made up of several elements, so for example, the key skill of staying well, contains the following key skill elements:

- Being healthy and physically active
- Being social
- Being safe
- Being spiritual
- Being confident
- Being positive about learning
- Being responsible, safe and ethical in using digital technology.

These key skills elements, and those of the other seven key skills have been mapped against the UNESCO key competencies for sustainability, and where explicit links exist these are represented in Table 9.

UNESCO key competency	Managing myself	Staying well	Managing information & thinking	Being numerate	Being creative	Working with others	Communicating	Being literate
Systems thinking		X	X	X	X		X	
Anticipatory	X	X	X	X	X	X	X	
Normative	X	X	X	X	X	X	X	
Strategic	X	X	X		X	X		
Collaboration	X	X	X		X	X	X	
Critical thinking	X	X	X		X	X		
Self-awareness	X	X			X	X		
Integrated problem-solving	-	-	X	X	X	X	-	

Table 9 Mapping of key competencies for sustainability and junior cycle key skills

As is evident in Table 9, there is clear coverage of the UNESCO key competencies for sustainability. The key skill of 'being creative' (elements: imagining, exploring options and alternative, implementing ideas and taking action; learning creatively; and, stimulating creativity using digital technology) is particularly relevant.

As previously stated, the key competencies for sustainability are high-level competencies, which assume that learners have a pre-existing set of foundational competencies. It is for this reason that the competencies cannot be explicitly mapped onto the junior cycle key skill of 'being literate'. However, there are links between the key competencies and the key skill of communicating (elements: using language; using number; listening and expressing myself; performing and presenting; discussing and debating; using digital technology to communicate), a higher-order key skill which builds on 'being literate'.

Level 2 Learning Programmes (L2LPs)

Level 2 Learning Programmes (L2LPs) are a crucial aspect of the *Framework for Junior Cycle 2015* and have been designed for students with a high moderate to low mild general learning disability in post primary mainstream or special schools. A Level 2 Learning Programme is made up of Priority Learning Units and Short Courses.

There are five Priority Learning Units (PLUs) at the heart of the L2LPs. These focus on skills-based learning and the transference of those skills into different situations and experiences, i.e., classrooms, school community, real life situations. The PLUs can be viewed as an alternative key skills structure for students who are accessing L2LPs.

The five PLUs are Communication and Literacy, Numeracy, Personal Care, Living in a Community, and Preparing for Work. PLUs are presented as self-contained units, but when used in learning programmes will be integrated and developed in a wide range of contexts. The PLUs are clearly interconnected; they overlap and interlink. The learning outcomes for each PLU are aligned with the Level 2 indicators on the National Framework of Qualifications.

PLU descriptors

Communication and Literacy

Communication underpins all learning and is fundamental to the capacity to transfer learning. Literacy is fundamental to learning, as it unlocks access to the wider curriculum and is underpinned by the idea of students developing competence in reading and writing as a goal in itself, and as a means through which new learning is acquired and communicated. Learning in this unit covers both verbal and non-verbal ways of receiving and giving information. Communication may take the form of listening and responding using augmentative or alternative communication systems. The unit looks at developing reading and writing skills and includes reference to how ICT is used in communication. The term communication is used in a broad way in this unit, which also considers how students can communicate through the expressive arts such as music and dance.

Numeracy

Numeracy is not simply a subset of mathematics. It is also a life skill that focuses on reasoning and sense making. It permeates and supports learning across the curriculum. This unit looks at how students can develop an awareness of patterns and relationships in shape and number, as well as skills in estimation and measurement. The student's ability to solve problems is also seen as central to the unit. Numeracy is a daily living skill, with significant applications to home and community life, as well as in the area of academic progress and achievement. This unit draws on a broad range of real life experiences, helping students develop knowledge and understanding in a range of topics such as number, shapes, space, money, time, and measurement.

Personal Care

This unit is concerned with the personal development of the students. It deals with their health and wellbeing covering areas such as healthy eating habits and healthy lifestyles. It is concerned with enabling students to be as independent as possible in catering for their personal care needs. This includes becoming aware of their sexuality, managing stress, and knowing how to stay safe in a range of contexts.

Living in a Community

This unit assists students in developing strategies to establish and maintain positive relationships with people around them. The elements include knowing how to deal with conflict and how to seek help and advice. It also considers the student's local community and the use of local facilities available to them.

Preparing for work

This unit assists students in making the transition from school to further education, training or employment.

Table 10 PLU descriptors

Each PLU is subdivided into elements, so for example Living in a Community includes the following elements:

- Developing good relationships
- Resolving conflicts
- Using local facilities
- Seeking help and advice
- Making consumer choices

The UNESCO key competencies 'are necessary for all learners of all ages worldwide' and are viewed as 'transversal, multifunctional and context-dependent' (UNESCO, 2017: 10). The key competencies can be mapped against the five PLUs and their elements as a way of demonstrating how the L2LP framework can facilitate student acquisition of key competencies at their ability level.

In terms of opportunities for the acquisition of key competencies for sustainability across all five PLUs, the most opportunity exists in relation to strategic thinking, followed by the collaborative competency, the anticipatory competency, critical thinking and self-awareness, and the normative competency. There is very limited opportunity in the PLUs for students to encounter strategic and integrated problem-solving competencies. Of the five PLUs, Communication provides the most opportunities to encounter key competencies for sustainability, followed by Living in a Community, Personal Care, Numeracy and finally, Preparing for Work.

In this section, the overall strength of the relationship between the UNESCO key competencies for sustainability and the junior cycle principles, statements of learning, key skills and Level 2 learning programmes are evidenced. This is especially important because the *Framework for Junior Cycle 2015* document is the curriculum foundation for subsequent junior cycle developments, and the principles, statements of learning and key skills are informing the development of, and be given expression through, the learning outcomes in subject and short course specifications.

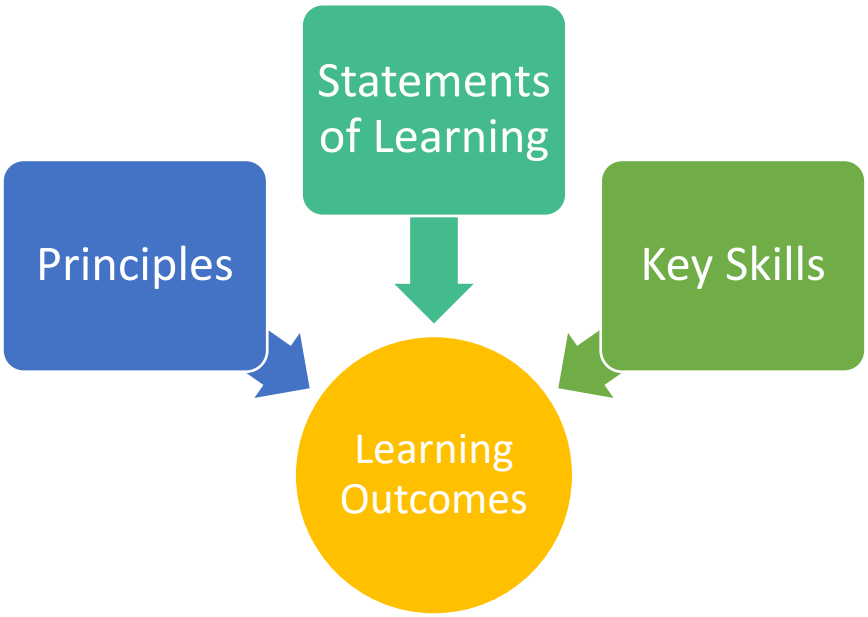


Figure 12 Integration of junior cycle principles, statements of learning and key skills into learning outcomes in specifications

Learning outcomes are statements in curriculum specifications for junior cycle subjects and short courses to describe the **knowledge**, understanding, **skills** and **values** students should be able to demonstrate after a period of learning. In the junior cycle case study section (pages 59-78) the Sustainable Development Goals are mapped against sample learning outcomes from subject and short course specifications. This demonstrates the potential scope of learning outcomes where teaching, learning and assessment about the Goals is concerned.

The *Framework for Junior Cycle 2015* provides ample opportunity for students to encounter key competencies for sustainability, and because the various elements of the framework are the bases for subject and short course learning outcomes, this creates a facilitative environment for the realization of the overall objective of the National Strategy for Education for Sustainable Development at junior cycle level, that is:

> *…to ensure that education contributes to sustainable development by equipping learners with the relevant knowledge (the 'what'), the key dispositions and skills (the 'how') and the values (the 'why') that will motivate and empower them throughout their lives to becomes informed and active citizens who take action for a more sustainable future (DES, 2014: 3).*

2.4 Senior cycle framework

The senior cycle framework is outlined in an NCCA document (2010) entitled *Towards Learning: An overview of senior cycle education.*

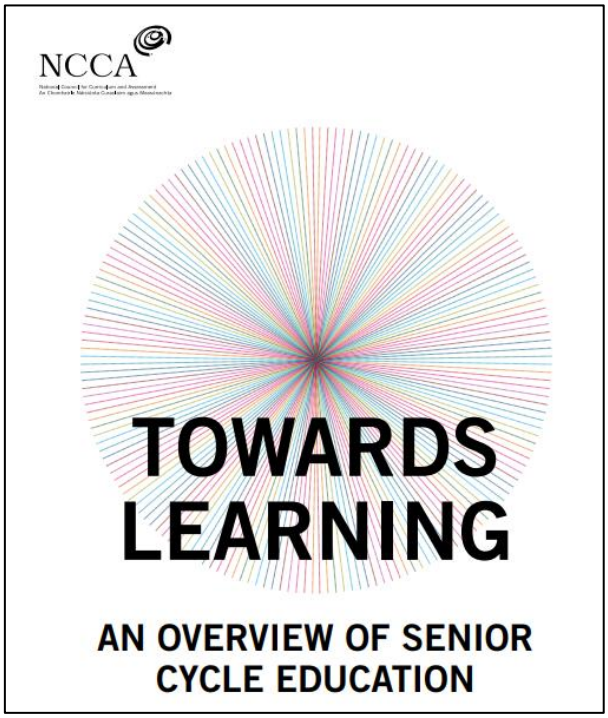


Figure 13 Towards Learning: An overview of senior cycle education

Towards Learning sets out the vision for senior cycle, the values underpinning the vision, the eight principles and five key skills that are shaping review and development at senior cycle level.

The vision for senior cycle is to support young people to become learners who are:

RESOURCEFUL they show their imagination, intelligence, intuition and other talents through curiosity, enquiry, open-mindedness, reflection, connecting learning, innovation, problem solving, creativity

CONFIDENT they develop their physical and mental well-being and become self-aware, have high self-efficacy, engage with ethics, values and beliefs, welcome opportunities, can cope with setbacks, can effect positive change

ENGAGED they participate in the social, community, national and international dimensions of their lives by showing respect for others, forming and sustaining caring relationships, making informed decisions, building practical know-how, taking interest in and responsibility for their social and physical environment, developing moral/ethical and political understanding, making lifestyle choices

that are sustainable, contributing to their own material well-being and the material well-being of society

ACTIVE they pursue excellence in learning to the best of their ability and develop a love of learning by seeking and using knowledge, and understanding how knowledge is created experiencing passion for, rigour in and commitment to learning developing intellectual and critical thinking skills, exercising autonomy and independence in learning, managing their learning and making learning choices, setting and achieving learning goals, pursuing learning qualifications

The vision for senior cycle is underpinned by the following values, all of which can empower learners to help create a more sustainable world:

Figure 14 Senior cycle values

The eight principles which form the basis of the senior cycle curriculum framework are shown in Figure 15, with elaborations provided for the principles most relevant to the spirit and intent of Education for Sustainable Development outlined below.

Figure 15 Senior cycle principles

Participation, relevance and enjoyment That the experience of the curriculum encourages participation, is engaging and enjoyable for learners, and relevant to their lives

Well-being That the curriculum contributes directly to the physical, mental and social well-being of learners

Creativity and innovation That the curriculum provides opportunities for learners to develop their abilities and talents in the areas of creativity, innovation and enterprise

Lifelong learning That the curriculum supports learners in developing the skills of managing and directing their own learning that will assist them in meeting the challenges of life beyond school, in further and continuing education, and in working life.

The senior cycle framework sets out five key skills that are required for successful learning by all students. These are presented in Figure 16.

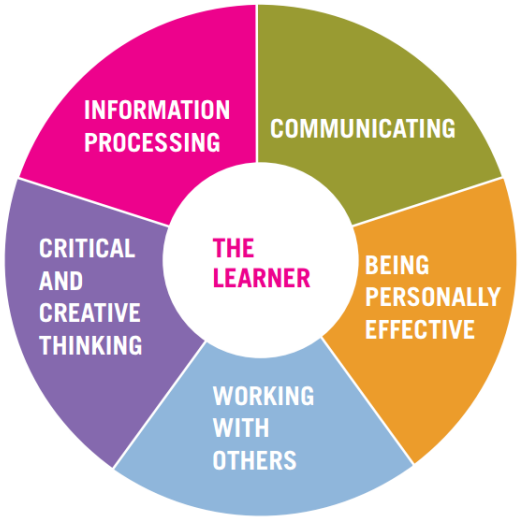


Figure 16 Five key skills for senior cycle

Like the junior cycle key skills, each of the senior cycle key skills are made up of several elements, so for example, the key skill of critical and creative thinking, contains the following key skill elements:

- Examining patterns and relationships, classifying and ordering information
- Analysing and making good arguments, challenging assumptions
- Hypothesising and making predictions, examining evidence and reaching conclusions
- Identifying and analysing problems and decisions, exploring options and alternatives, solving problems and evaluating outcomes
- Thinking imaginatively, actively seeking out new points of view, problems and/or solutions, being innovative and taking risks

These key skills elements, and those of the other four key skills have been mapped against the UNESCO key competencies for sustainability, and where explicit links exist these are represented in Table 11.

UNESCO key competency	Information processing	Critical and creative thinking	Being personally effective	Communicating	Working with others
Systems thinking	X	X	X	X	
Anticipatory		X	X	X	X
Normative				X	X
Strategic		X	X		X
Collaboration		X	X	X	X
Critical thinking	X	X	X	X	X
Self-awareness		X		X	X
Integrated problem-solving	X	X	-	-	-

Table 11 Mapping of key competencies for sustainability and senior cycle key skills

The mapping exercise has thrown up some points with regards to the senior cycle key skills that are worth considering in the event of any future review, for example:

- The digital aspects of the senior cycle key skills are presented in a narrow way in comparison to the articulation at junior cycle – this narrower presentation means that it is more difficult to find explicit links between the key competencies for sustainability and senior cycle key skills.
- The key skill of 'being personally effective' focuses on individual and personal evaluation/appraisal, goals, qualities, confidence etc., and therefore has limited scope for reflection beyond self. This is different than the junior cycle approach, where the idea of 'being personally effective' is found across key skills such as 'staying well', 'communicating' and 'being creative,' but is most strongly associated with 'managing myself'. The junior cycle approach to personal effectiveness is broader and this allows learners to, for example to 'listen to different perspectives when considering my options' (managing myself – making considered decisions) and 'contribute to decision-making within the class and group' (staying well – being confident).
- The senior cycle key skill of 'critical and creative thinking' is skewed in favour of critical thinking key skill elements. As has been discussed, with reference to the junior cycle key skill of 'being creative', creativity and innovation is very important for ESD. This also needs to be considered in any future revision of senior cycle key skills.
- At senior cycle, the key skill of 'working with others' outlines that students should be able to 'recognise that working with others is an intrinsic part of home, school, work and leisure' and should be able to 'explore the contexts in which they work in groups' and the 'need to respond flexibly in different contexts' (working with others – working with others in a variety of contexts with different goals and purposes). At junior cycle, the equivalent key skill is much further reaching and therefore presents more opportunities for learner attainment of the UNESCO competencies. At junior cycle, the key skill of 'working with others' includes the element 'contributing to making the world a better place,' which means that students can 'believe in [their] ability to make a difference' and 'think critically about the world and its problems and propose solutions' and 'get involved in [their] community (including global) towards creating a better world' (working with others – contributing to making the world a better place).
- The concept of rights and responsibilities in senior cycle key skills is included in a limited sense in the key skill of 'working with others' – students should be able to 'respect the rights and view of others in the group' and should be able to 'negotiate individual responsibilities' in the context of group work. At junior cycle, the key skill of 'staying well' means that students can 'recognise [their]

rights and responsibilities as a local and global citizen' (staying well – being social), 'respect the rights and responsibilities of others in using digital technology' (staying well – being safe), 'respect the rights and feelings of others when using digital media' (working with others – working with others through digital technology).

- The exercise of mapping the key competencies of sustainability against senior cycle key skills has highlighted one additional senior cycle gap, insofar as there is no equivalent key skill to junior cycle 'staying well'. 'Staying well' provides learners with opportunities to attain skills with a global and sustainability orientated focus.

The senior cycle key skills were first developed in 2008. The limitations outlined above reflect NCCA thinking at that time. In contrast, the NCCA began to work on the recent junior cycle curriculum developments in 2010/11. Junior cycle curriculum change has been more comprehensive and far-reaching than senior cycle work in the same period. This goes towards explaining why the *Framework for Junior Cycle 2015* is more cognisant of current curriculum and ESD thinking in Ireland and at an international level.

As for junior cycle, learning in revised and new senior cycle curriculum specifications are expressed in learning outcomes. The learning outcomes help to ensure that the objectives of the relevant curriculum component, the learning and teaching strategies adopted, and the assessment approaches employed are consistent with each other and integrate the key skills effectively (NCCA, 2010: 11). Limitations and gaps in the senior cycle framework document can potentially have a negative alignment impact. If the key skills are not expressed to optimise student attainment in relation to the key competencies for sustainability, then this can also impact on the articulation of learning outcomes at curriculum specification level, and a further compounding of limitations and gaps. The NCCA is involved in ongoing review of Leaving Certificate subjects and the development of new areas of learning, and in 2018 began a consultative discussion about the purpose and structure of senior cycle education into the future. The issues and challenges identified in this study will be addressed as part of this ongoing senior cycle work.

3. Case Studies

Based on the criteria outlined on page 13, the curriculum components in Table 12 were selected as case studies from the primary, junior cycle and senior cycle programmes.[3]

Primary	Junior cycle (levels 2 & 3)	Senior cycle
Language (infants-2nd class)	Civic, Social and Political Education (CSPE)	Agricultural Science
SESE (History, Geography & Science)	Business Studies	English
Social, Personal and Health Education (SPHE)	English	Politics and Society
	History	Geography
	Science	
	Visual Art	
	Home Economics	
	Caring for animals (level 2)	
	CSI: Exploring forensic science (level 2)	

Table 12 Case studies from primary, junior cycle and senior cycle

[3] All primary and post primary curriculum documentation is available: www.curriculumonline.ie

3.1 Primary case studies

The 1999 primary curriculum is divided into seven curriculum areas of learning, as shown in Figure 17:

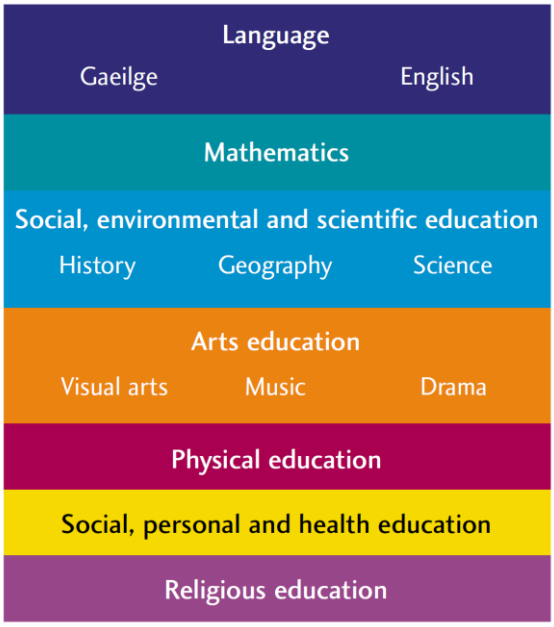


Figure 17 The seven primary curriculum areas of learning

The primary case studies in this section cover three of the seven curriculum areas, namely: Languages (the new curriculum for English and Irish for infants to 2nd class); Social, environmental and scientific education (SESE) (subdivided into the subjects of History, Geography and Science); and, Social, Personal and Health Education (SPHE) which is considered both a curriculum area and a subject.

Primary language curriculum

This curriculum is for teachers of children in junior and senior infants and in first and second class (children aged approximately from 4-5 years to 8-9 years of age). It applies in all school contexts—English-medium schools, Gaeltacht schools, Irish-medium schools and special schools. The curriculum for junior and senior infants is aligned with the principles and methodologies of *Aistear: The Early Childhood Curriculum Framework*.

The new primary language curriculum is being rolled out on a phased-bases, with professional development support through the Professional Development Service for Teachers (PDST). In 2016/17, the focus was on the oral strand for infants to second class. In 2017/18, the focus is on the reading

and writing strands. From September 2018, all strands of the language curriculum will be implemented for pupils in infants to second classes.

The aims of the Primary Language Curriculum are presented in three groups: focusing on children and their lives, children's communications and connections with others, and children's language learning and development. The latter group includes an aim which is particularly relevant to the spirit and intent of ESD, namely to support teachers to:

> *…broaden children's understanding of the world through a rich variety of language experiences and through fostering an awareness and appreciation of other languages and cultures in an enriching learning environment…(DES, 2015e: 27).*

The new Language curriculum is written in learning outcomes format, and in this is aligned with recent junior and senior cycle development. However, it is important to note that to date the languages curriculum is the only learning outcomes-based specification at primary level.

The new language learning outcomes describe the expected language learning and development for children at the end of a two-year period: junior and senior infants, then first and second class. Reflecting Aistear's learning goals, the phrase, 'Through appropriately playful learning experiences, children should be able to...' is used to introduce each learning outcome. Given the diversity in children's language learning and development across any class group, this curriculum describes children's language learning on a continuum.

The learning outcomes are organized into three strands: Oral language, Reading and Writing, and these strands have three cross-cutting elements, as outlined in Figure 18:

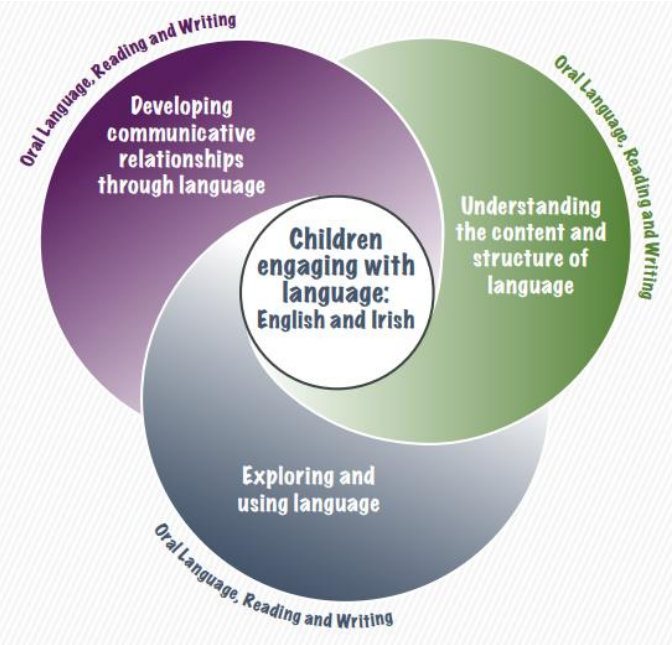


Figure 18 Three strand elements of the new language curriculum

It is useful to consider one sample learning outcome from each of the Strands:

Sample Learning Outcomes
Recognise that language style changes with different relationships and audiences and show understanding of the listener's needs while initiating, sustaining and engaging in conversations on personal and curriculum-based topics and responding non-verbally and verbally. (LO 2 - Communicating)
Demonstrate understanding through the ability to give and follow instructions, comprehend narratives and explanations, and clearly state a case including speculating, hypothesising, justifying, negotiating, arguing and complaining. (LO 7 - Understanding)
Describe, predict and reflect upon actions, events and processes relating to real and imaginary contexts. (LO 14 - Exploring and using)

These learning outcomes are representative of the nature of the language learning outcomes in the new curriculum. They are sufficiently broad to ensure that pupils can encounter sustainability topics through teaching, learning and assessment. However, language learning outcomes are skills based and process-orientated and the scope for embedding UNESCO learning objectives in relation to specific Sustainable Development Goals is dependent upon the professional capacity, interest and disposition of the teacher. The primary language curriculum is an open door for teaching, learning and assessment about and for sustainable development and teachers are the key to ensuring these opportunities are capitalised upon.

Social, Environmental and Scientific Education (SESE)

Social, Environmental and Scientific Education (SESE) consists of three subjects: Science, Geography and History. The current SESE curriculum was introduced as part of the Primary School Curriculum (1999).

SESE aims to:

- enable the child to acquire knowledge, skills and attitudes so as to develop an informed and critical understanding of social, environmental and scientific issues
- reinforce and stimulate curiosity and imagination about local and wider environments
- enable the child to play a responsible role as an individual, as a family member and as a member of local, regional, national, European and global communities

- foster an understanding of, and concern for, the interdependence of all humans, all living things and the earth on which they live
- foster in the child a sense of responsibility for the long-term care of the environment and a commitment to promote the sustainable use of the earth's resources through his/her personal life-style and participation in collective environmental decision-making
- cultivate humane and responsible attitudes and an appreciation of the world in accordance with beliefs and values

SESE: History

History is for all children from junior infants to sixth class. The curriculum aims to support children to develop basic skills as an historian through a knowledge and understanding of people, events and developments in the past.

The curriculum is presented in two sections: (1) Skills and, (2) Content.

The content section is subdivided as follows:

- Myself and my family
- Story
- Early people and ancient stories
- Life, society, work and culture in the past
- Eras of change and conflict
- Politics, conflict and society
- Continuity and change over time

The history curriculum has 13 broad objectives, applicable to all stages. While these objectives provide some opportunities for children to develop key competencies for sustainability, the following objectives are closely associated with the spirit and intent of Education for Sustainable Development:

- learn about the people, events, issues and cultural experiences which have helped to shape the local community and the environment
- respect and value a range of opinions and acquire open, questioning attitudes to the beliefs, values and motivations of others

- develop tolerance towards minorities in society and appreciate the contribution of various ethnic, cultural, religious and social groups to the evolution of modern Ireland
- develop a sense of personal, local, national, European and wider identities through studying the history and cultural inheritance of local and other communities
- develop a sense of responsibility for, and a willingness to participate in, the preservation of heritage

Sample specific learning objectives in the History curriculum with links to a range of Sustainable Development Goals include the following:[4]

Sample specific Learning Objectives for third and fourth-class History

Strand: Local studies

Strand Unit: Buildings, sites or ruins in my locality

The child should be enabled to:

- actively explore some features of the local environment: *local church, old house or houses, estate farmyard, street (or section of a street), bridge or old road, mill, hospital, shop front or other building facades, castle or towerhouse*
- investigate various aspects of these sites: *origins and location; their appearance now and formerly; purpose of construction; elements which have changed; elements which have remained unchanged; what it was like for people to live, work, worship or die in this place; stories of people who lived, worked, worshipped or died* in this place
- present findings using a variety of media and appropriate timelines.

[4] NB: These are sample learning objectives only and should not be taken as an exhaustive list.

Sample specific Learning Objectives for fifth and sixth class History
Strand: Local studies

Strand Unit: Buildings, sites or ruins in my locality

The child should be enabled to:

- actively explore some features of the local environment; suitable items or places might include: *streetscape (including building styles and features, street furniture), area of a town or village, industrial site (e.g. factories, mills), local canal, bridges, road patterns, railways, ruined building (e.g. towerhouse), site of an old monastery, graveyard, Mass path, Mass rock, holy well, prehistoric site (e.g. rath, portal tomb), farmyard, field and farm patterns, landlord's house, houses of tenants, ice house, sweat house, battle sites, local rights of way*
- investigate various aspects of these sites: *origins and location; maps of site then and now; appearance of site now and formerly; purpose of construction elements which have changed and the reasons for change; elements which have remained unchanged; lives of people in this place over time*
- identify opportunities to become involved in enhancing and protecting the environmental features
- present findings using a variety of media and appropriate timelines

SESE: Geography

Geography is for children from junior infants to sixth class. The curriculum aims to enable children to make sense of their surroundings and the wider world. They do so by developing a range of geographical skills as they explore the natural and human elements of local and wider environments.

The curriculum is presented in two sections: (1) Skills and concepts; and (2) Content. The content section is subdivided as follows:

- Human environments
- Natural environments
- Environmental awareness and care

The geography curriculum has 14 broad objectives, applicable to all stages. While these objectives provide some opportunities for children to develop key competencies for sustainability, the following objectives are closely associated with the spirit and intent of Education for Sustainable Development:

- develop knowledge and understanding of natural and human environments in the locality, region, Ireland, Europe and the world
- understand some of the natural, social or economic processes which create, sustain or change environments
- study the impact of environmental conditions on the lives of people in the locality and in other areas, and come to appreciate some of the ways in which humans use, modify or influence their environments
- engage in active exploration of local and other environments as an intrinsic element of learning
- learn that the sharing, responsible use and conservation of the Earth's natural and human resources are necessary for the continued existence of life
- develop aesthetic sensitivity to the natural and human elements of the environment and to the repercussions of human actions
- learn of and come to value the diversity of peoples, cultures and societies in Ireland and throughout the world, acquire an awareness of human interdependence and develop empathy with others
- use and value creative, innovative thinking in the exploration and/or resolution of human and environmental issues.

Sample specific learning objectives in the Geography curriculum with links to a range of Sustainable Development Goals include the following: [5]

[5] NB: These are sample learning objectives only and should not be taken as an exhaustive list.

Sample specific Learning Objectives for junior and senior infants Geography

Strand: Environmental awareness and care

Strand Unit: Caring for my locality

The child should be enabled to

- observe, discuss and appreciate the attributes of the local environment beauty and diversity of plants and animals in a variety of habitats attractive elements of natural and human environments
- appreciate that people share the environment with plant and animal life
- develop a sense of responsibility for taking care of and enhancing the environment
- identify, discuss and implement simple strategies for improving and caring for the environment

things I can do: caring for clothes, toys and other possessions keeping home and surroundings clean and tidy; caring for living and non-living things in the locality

things we can do together: keeping classroom, school and play spaces clean; tidy and safe disposing of litter; appropriately collecting paper, cans and other materials for recycling; caring for living and non-living things in the locality

Sample specific Learning Objectives for third and fourth-class Geography

Strand: Human environments

Strand Unit: People and other lands

The child should be enabled to

- study some aspects of the environments and lives of people in one location in Europe and one location in another part of the world
- location of these areas; peoples and communities that live there; language(s); myths and stories, art and culture; clothes; play and pastimes; features of the natural environment; interrelationships of the lives of people and these features; settlements: homes and other buildings; common building materials and features; foods and farming; work and work-places; similarities to and contrasts with Ireland
- develop an awareness of the interdependence of these people and people in Ireland

- begin to develop a sense of belonging to local, county, national, European and global communities

<u>Sample</u> specific Learning Objectives for fifth and sixth-class Geography

Strand: Human environments

Strand Unit: Trade and development issues

The child should be enabled to

Trade

- explore, through the study of some major world commodities, trade issues

commodities used by people in Ireland (e.g. sugar, tea, coffee, bananas, rubber, oil); where and how they are produced; environment where they are produced; work of people who produce these products; trading of these products; manufacturing, sale and distribution in Ireland; terms of trade, fair or unfair trade conditions

or

Famine

- become aware of the causes and effects of famine

Causes; environmental factors; natural disasters; social and economic factors; unequal distribution of land, resources or food; effects on families and communities, on land and environment, and on population movements

- examine the work of relief agencies and become aware of Irish involvement in them
- discuss possible short and long-term solutions to famine
- compare the experience of famine in Ireland with that of other countries

or

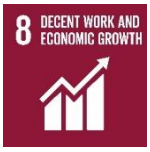
Development and aid

- come to appreciate the inequalities between the developed and the developing world
- explore some of the issues and problems associated with aid

effect on recipients, appropriate technology

- acquire some knowledge of the origins, work and Irish involvement in some major international organisations

United Nations High Commission for Refugees (UNHCR) major non-governmental organisations (NGOs) (e.g. Trócaire, Red Cross).



SESE: Science

Science is for children from junior infants to sixth class. The curriculum supports children to develop basic scientific skills through a knowledge and understanding of science.

The curriculum is presented in two sections: (1) Skills; and (2) Content. The content section is subdivided as follows:

- Living things
- Energy and forces
- Materials
- Environmental awareness and care.

The science curriculum has 12 broad objectives, applicable to all stages. While these objectives provide some opportunities for children to develop key competencies for sustainability, the following can objectives are closely associated with the spirit and intent of Education for Sustainable Development:

- develop an interest in and curiosity about the world through the exploration and study of living and non-living things
- develop a knowledge and understanding of scientific ideas through the study of living things and the environments in which they live, energy and forces, materials and processes of change
- explore and appreciate the influence that scientific and technological developments have on societies, life-styles, economic activities and the environment
- explore the environmental repercussions of human actions on physical, natural and human environments
- understand the interdependence of a wide variety of living things and their environments, recognise the importance of conserving habitats and environments, and begin to understand that all life now and in the future depends on the sustainable development of the planet
- become actively involved in the discussion, exploration and resolution of environmental issues

Sample specific learning objectives in the Science curriculum with links to a range of Sustainable Development Goals include the following:[6]

[6] NB: These are sample learning objectives only and should not be taken as an exhaustive list.

<u>Sample</u> specific Learning Objectives for first and second-class Science
Strand: Environmental awareness and care

Strand Unit: Caring for my locality

The child should be enabled to

- identify, discuss and appreciate the natural and human features of the local environment
- observe and develop an awareness of living things in a range of habitats in local and wider environments
- observe similarities and differences among plants and animals in different local habitats
- develop an awareness that air, water, soil, living and non-living things are essential to the environment
- begin to recognise that people, animals and plants depend on one another
- realise that there is both an individual and a community responsibility for taking care of the environment
- identify, discuss and implement simple strategies for improving and caring for the environment

  caring for clothes, toys and other possessions; caring for living things in the locality; keeping home, classroom, school and play spaces clean, tidy and safe
- identify and help to implement simple strategies for protecting, conserving and enhancing the environment

  planting trees, flowers; developing a school garden; engaging in anti-litter campaigns
- become aware of ways in which the environment can be polluted or harmed litter, pollution, vandalism.

<u>Sample</u> specific Learning Objectives for third and fourth-class Science

Strand: Living things

Strand Unit: Human life

The child should be enabled to

Human life processes

- develop an awareness of the importance of food for energy and growth
- need for a balanced and healthy diet; structure and function of teeth; design and make a nutritious sandwich for lunch; design and make a clay model of a set of teeth (or part of a set of teeth)
- become aware of and investigate breathing

  appreciate the need for oxygen from the air; understand that air is drawn in through mouth and nose and passes through windpipe to lungs; investigate breathing rate before and after exercise recognise dangers of smoking and air pollution

[NB: This example excludes learning objectives that are less explicitly relevant to ESD]

<u>Sample</u> specific Learning Objectives for fifth and sixth-class Science

Strand: Environmental awareness and care

Strand Unit: Science and the environment

The child should be enabled to

- examine some ways that science and technology have contributed positively to the use of the Earth's resources

purifying water, mixing materials to produce new materials, medicines, processing food, preserving food, generating electricity, using fertilisers for increased agricultural yields

- recognise the contribution of scientists to society

work of scientists in the past and present

- recognise and investigate aspects of human activities that may have positive or adverse effects on environments

activities that protect flora and fauna, such as creating a wildlife area and planting trees enhance built environments affect the quality of air, soil, water and the built environment.

[NB: This example excludes learning objectives that are less explicitly relevant to ESD]

Social, Personal and Health Education (SPHE)

SPHE is for children from junior infants to sixth class. The SPHE curriculum:

- fosters children's well-being, self-confidence and sense of belonging
- develops children's sense of personal responsibility for their own behaviour and actions
- promotes children's self-awareness and understanding by helping them to manage their own feelings, to recognise and appreciate individual abilities, and to cope with change of various kinds
- supports children to become active and responsible citizens.

The curriculum consists of three strands:

- Myself
- Myself and others
- Myself and the wider world

The SPHE curriculum has 15 broad objectives, applicable to all stages. While these objectives provide some opportunities for children to develop key competencies for sustainability, the following objectives are closely associated with the spirit and intent of Education for Sustainable Development:

- be self-confident and have a positive sense of self-esteem
- develop and enhance the social skills of communication, co-operation and conflict resolution
- create and maintain supportive relationships both now and in the future
- develop an understanding of healthy living, an ability to implement healthy behaviour and a willingness to participate in activities that promote and sustain health
- develop a sense of safety and an ability to protect himself/herself from danger and abuse
- make decisions, solve problems and take appropriate actions in various personal, social and health contexts
- become aware of, and discerning about, the various influences on choices and decisions
- begin to identify, review and evaluate the values and attitudes that are held by individuals and society and to recognise that these affect thoughts and actions
- respect the environment and develop a sense of responsibility for its long-term care
- develop some of the skills and abilities necessary for participating fully in groups and in society

- become aware of some of the individual and community rights and responsibilities that come from living in a democracy
- begin to understand the concepts of personal, local, national, European and global identity
- appreciate and respect the diversity that exists in society and the positive contributions of various cultural, religious and social groups
- promote the values of a just and caring society in an age-appropriate manner and understand the importance of seeking truth and peace.

Sample specific learning objectives in the SPHE curriculum with links to a range of Sustainable Development Goals include the following:[7]

Sample specific Learning Objectives for junior and senior infants SPHE

Strand: Myself

Strand Unit: Self-identity

The child should be enabled to

Developing self-confidence

- express own views, opinions and preferences
- become more self-reliant and independent

taking responsibility for own personal belongings; asking relevant questions to seek clarification; beginning to reflect on his/her own learning and experiences; accepting that making mistakes and trying again are part of the learning process; attempting new tasks with courage; learning to save money

- begin to learn how to cope with various changes as they occur

moving to a new class, losing a friend

Making decisions

- identify some everyday choices made by himself/herself and those that are made by others
- begin to develop some awareness of factors that may influence decisions or choices taken.

[NB: This example excludes learning objectives that are less explicitly relevant to ESD]

[7] NB: These are sample learning objectives only and should not be taken as an exhaustive list.

<u>Sample</u> specific Learning Objectives for first and second-class SPHE

Strand: Myself

Strand Unit: Taking care of my body

The child should be enabled to

Knowing about my body

- appreciate the need and understand how to care for the body in order to keep it strong and healthy

  regular sleep and rest, a balanced diet, regular exercise, quiet time, relaxation, correct posture
- recognise the importance of treating the body with respect and dignity
- explore the various things the body can do see, hear, move, breathe, make energy, feel, think
- name parts of the male and female body, using appropriate anatomical terms, and identify some of their functions
- develop and practise basic hygiene skills discussing and exploring the effects of poor personal hygiene

  practising and learning about hygienic eating habits; practising effective dental care
- realise that each individual must take some responsibility for self-care
- become aware of how infection spreads easily and the importance of adhering to a code of hygiene
- recognise and examine some of the substances that are taken into the body and the purpose and function of each one

Food and nutrition

- explore the importance of food for promoting growth, keeping healthy and providing energy
- appreciate that balance, regularity and moderation are necessary in the diet

  the food pyramid, the need for a balanced diet, the importance of having an appropriate intake of liquids, food that is unhealthy for some people and not for others
- identify some of the foods that are derived from plant and animal sources
- recognise and practise good hygiene when dealing with food.

<u>Sample</u> specific Learning Objectives for third and fourth-class SPHE

Strand: Myself and the wider world

Strand Unit: Developing citizenship

The child should be enabled to

Local and wider communities

- realise what it means to belong to a group

  supporting others, setting goals and targets, recognising the strengths of others, adhering to democratic rules and regulations, respecting the views of everyone, having rights and responsibilities
- recognise how each person has both an individual and a communal responsibility to the community

  being a good neighbour and a good citizen, being aware of and taking action to help those who may be in need
- appreciate the diversity of people or groups within communities and the importance of mutual respect, empathy and understanding for living together in peace and harmony
- examine how justice, fairness and equality may or may not be exemplified in a community exploring discrimination against particular groups, racism, recognising stereotyping of any kind and exploring how it can be counteracted
- explore some of the issues and concerns in the local or national community

  consequences, possible solutions, role of each individual
- discuss the role of leaders and organisations that serve the community at different levels and the influence that they have

  mayor, credit union, sports clubs
- become aware of his/her own culture and recognise traditions, festivals and celebrations that are unique to the locality, region or country

  language, music, folklore, literature, national flag and anthem, celebrate local or national achievements and accomplishments
- begin to develop an awareness of the lives and culture of some people in the European Union

Environmental care

- appreciate and respect the environment and learn that there is an individual and community responsibility in caring for the environment and protecting it for future generations.

<u>Sample</u> specific Learning Objectives for fifth and sixth-class SPHE

Strand: Myself and the wider world

Strand Unit: Media education

The child should be enabled to

- explore and understand how information is conveyed and practise relaying messages using a variety of methods

  information and communication technology, letter, telephone, picture, poster, sign, film, book
- explore the role of newspapers and other forms of print media in transmitting messages, the techniques used, and the types of information included

  identifying information that may be deliberately excluded, the role of bias
- recognise unequal treatment of sexual roles and other issues in literature, advertising, drama, magazines and other media
- identify the audiences at which different aspects of the media are aimed

  the approaches used, the content
- become aware of the different forms of advertising, its purpose and the messages it promotes

  advertising messages—slim always means healthy, beautiful people smoke and drink, certain diets are safe, beauty is physical, hidden links between body-image and certain products—you will belong if you use this product, what I need versus what I want
- become increasingly critical and discerning in his/her own attitude to advertising and the techniques used to promote products, life-styles and ideas

  techniques: beauty and glamour to promote certain products, the use of music, associating personalities with certain products, giving free gifts on purchase, the use of attractive visual images, the repetition of certain advertisements
- explore various recreation and leisure activities as an alternative to watching television
- explore and use some simple broadcasting, production and communication techniques

  lighting, voice-over, interview, camera work, using different kinds of music, e-mail.

The curriculum areas/subjects case studies presented here do not represent an exhaustive study of all opportunities for teaching, learning and assessment about the Sustainable Development Goals in the primary programme. Additional opportunities exist for all primary stages, in both the curriculum areas/subjects included as case studies, and in curriculum areas/subjects not included in this study. These case studies should be viewed as a snapshot of the possibilities in the current primary curriculum programme, and the basis for deliberations about the potential to further embed ESD in primary curriculum as part of ongoing and future change at this level of the formal education system.

3.2 Junior cycle case studies

The junior cycle programme is made up of the following subjects and short courses:

Subjects	**Short courses**[8]
Business Studies	Civic, Social and Political Education (CSPE): A citizenship course
Classical Studies	Physical Education (PE)
English	Digital Media Literacy
Gaeilge	A Personal Project: Caring for animals (level 2)
Geography	Artistic Performance
History	CSI: Exploring forensic science (level 2)
Home Economics	Chinese language and culture
Jewish Studies	Philosophy
Latin	
Materials Technology (Wood)	
Mathematics	
Metalwork	
Modern Foreign Languages (French, German, Italian and Spanish)	
Music	
Religious Education	
Science	
Technical Graphics	
Technology	
Visual Art[9]	

Table 13 Junior cycle subjects and short courses

The subjects and short courses highlighted in Table 13 are those chosen as junior cycle case studies, using the selection criteria outlined on page 13. Each case study is based on the common level specifications produced by the NCCA as part of the implementation of junior cycle reform as laid out in the *Framework for junior cycle 2015*.

[8] Unless otherwise stated these short courses are level 3.
[9] Formerly entitled Art, Craft and Design.

Junior cycle subjects

Business Studies

The rationale for junior cycle Business Studies includes the following text which is closely associated with the spirit and intent of Education for Sustainable Development:

> *Studying business helps to equip students with the understanding, skills and attitudes to participate fully in an interconnected world.*
>
> *Business studies encourages students to develop an appreciation of how their lives are shaped by economic and social factors.*
>
> *Business studies explores the interdependence of economic prosperity, societal well-being and the environment and encourages students to think and act as responsible and ethical citizens (DES, 2015c: 4).*

Business Studies aims to:

> *…develops skills, knowledge, attitudes and behaviours that allow [students] to make informed and responsible decisions with all of the resources available to them, ensuring their and society's well-being, while becoming more self-aware as learners (DES, 2015c: 4).*

Learning outcomes in the Business Studies specification are organized into three strands, with three cross-cutting strand elements:

Figure 19 Junior cycle Business Studies - strands and strand elements

Junior cycle Business Studies includes learning outcomes with content explicitly relevant to sustainable development and the Sustainable Development Goals, thereby ensuring that ESD-relevant teaching and learning happens in Business Studies classrooms. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes that may not specifically mention sustainable development. To illustrate this range of possibilities, one learning outcome from each strand element is mapped to relevant Sustainable Development Goal(s) below[10]:

[10]  The use of the circle logo for the Sustainable Development Goals signifies potential for linkage to any of the seventeen Goals.

<u>Sample</u> Business Studies learning outcomes mapped to relevant SDG(s)

Strand One: Personal Finance

Strand element: Managing my resources

1.2 Identify and classify sources of income and expenditure, compare options available to best manage financial resources, evaluating the risks associated with each option and making informed and responsible judgements

Strand element: Exploring business

1.9 Debate the ethical and sustainability issues that arise from their consumption of goods and services and evaluate how they can contribute to sustainable development through consumer behaviour

Strand element: Using skills for business

1.12 Prepare and analyse a budget, determine the financial position, recommend appropriate action and present the analysis in tabular and graphic formats

Strand Two: Enterprise

Strand element: Managing my resources

2.2 Describe the skills and characteristics of being enterprising and appreciate the role of an entrepreneur in an organisation, in society and to the economy

Strand element: Exploring business

2.5 Investigate the positive and negative impacts on a community of an organisation from an economic, social and environmental perspective

Strand element: Using skills for business

All seven learning outcomes in this strand element could be relevant to ESD if students undertake the Enterprise in Action classroom-based assessment related to a sustainable good/service or event related to one or more of the SDGs.

Strand Three: Our Economy

Strand element: Managing my resources

3.1 Explain how scarcity of economic resources results in individuals having to make choices; predict possible consequences of these choices

Strand element: Exploring business

3.6 Explain how economic growth can impact positively and negatively on society and the environment and justify the promotion of sustainable development

Strand element: Using skills for business

3.11 Evaluate the benefits and costs of a government economic policy and assess who enjoys the benefits and who bears the costs

English

The rationale for junior cycle English recognises the important contribution that students with 'knowledge and command of language' can make 'to political, social and cultural life and as thoughtful and active citizens' (DES, 2015b: 4).

Learning outcomes in the English specification are organized into three strands: Oral language, Reading and Writing. There are three cross-cutting, integrated strand elements, as displayed below:

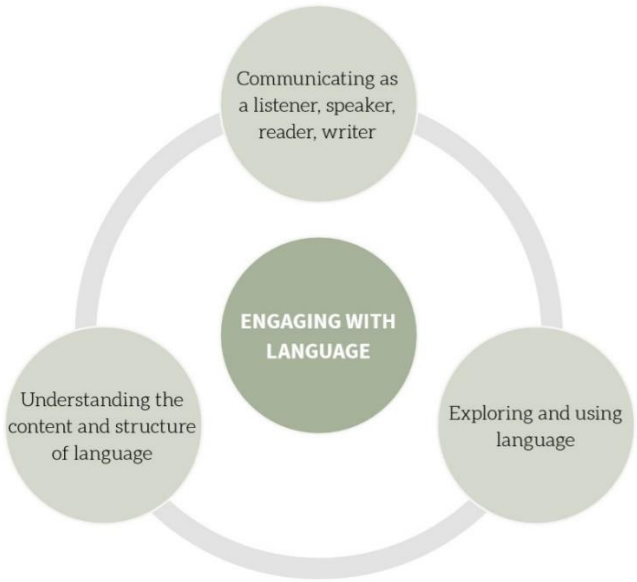


Figure 20 The elements of English showing the components as interactive and interdependent

It is useful to consider one sample learning outcome from each of the strands:

Sample Learning Outcomes
Students should be able to know and use the conventions of oral language interaction in a variety of contexts, including class groups, for a range of purposes, such as – asking for information, stating an opinion, listening to others, informing, explaining, arguing, persuading, criticising, commenting, narrating, imagining, speculating.' (Strand 1: Oral language – OL1)
Students should be able to select key moments from their text and give thoughtful value judgements on the main character, a key scene, a favourite image from a film, a poem, a chapter, a media or web-based event.' (Strand 2: Reading – R7)
Students should be able to 'write competently in a range of text forms, for example – letter, report, multi-modal text, review or blog, using appropriate vocabulary, tone and a variety of styles to achieve a chosen purpose for different audiences'. (Strand 3: Writing – W4)

These learning outcomes are representative of the nature of the learning outcomes in the junior cycle English specification.

In general, the learning outcomes in junior cycle English are sufficiently broad, skills-based and process oriented to ensure that students can encounter key competencies for sustainability through teaching, learning and assessment. The scope for addressing content related to specific Sustainable Development Goals is dependent upon the professional capacity, interest and disposition of the teacher. The flexibility of text choice in junior cycle English means that teachers can pick texts which can be linked to one or more of the Sustainable Development Goals or can be influenced by student interest in contemporary global challenges or themes. As with the new primary language curriculum, junior cycle English is an open door for teaching, learning and assessment about and for sustainable development and teachers are the key to ensuring these opportunities are capitalised upon.

History

The rationale for junior cycle History includes the following text, which is relevant to the spirit and intent of ESD:

> *Studying history develops our historical consciousness, enabling us to orient ourselves in time and to place our experiences in a broader framework of human experience. Being historically conscious transforms the way that we perceive the world and our place in it and informs how we see the future development of the world (NCCA, 2017a: 6).*

The aim of junior cycle History is to instil in students 'a respect for integrity, objectivity and looking at issues from different perspectives'; to support them to become critical thinkers so that they can 'interrogate sources of evidence and make judgements about the viewpoint expressed, including the capacity to identify propaganda'.

> *Hearing and telling the stories of people who lived in the past helps students to understand more about how people live today; and can help students to learn from the past when thinking about how to address the problems of today (NCCA, 2017a: 7).*

Learning outcomes in the History specification are organized into three strands. Strand One: The Nature of History is both a formational and a unifying strand. Strands two and three are contextual strands.

Figure 21 History strands and strand elements

The learning outcomes in Strand One focus on the nature of history as a discipline, and, the skills, concepts, values and attitudes that inform the learning of history. Strand one learning outcomes are intended to inform teaching, learning and assessment associated with learning outcomes in the two contextual strands. Several of the Strand One learning outcomes represent good examples of an articulation of key competencies for sustainability (page 12) at a specification, rather than framework, level, for example:

Strand 1: The nature of History

Strand element: Developing historical consciousness

1.2 consider contentious or controversial issues in history from more than one perspective and discuss the historical roots of a contentious or controversial issue or theme in the contemporary world

Strand element: Working with evidence

1.7 develop historical judgements based on evidence about personalities, issues and events in the past, showing awareness of historical significance

Strand element: Acquiring the 'big picture'

1.9 demonstrate awareness of the significance of the history of Ireland and of Europe and the wider world across various dimensions, including political, social, economic, religious, cultural and scientific dimensions

1.11 make connections and comparisons between people, issues and events in different places and historical eras

Strands two and three includes learning outcomes relevant to sustainable development and the Sustainable Development Goals, thereby ensuring that ESD-relevant teaching and learning happens in classrooms. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes that may not immediately resonate with the SDGs. To illustrate this range of possibilities, learning outcomes from each strand element is mapped to relevant Sustainable Development Goal(s) below:

<u>Sample</u> History learning outcomes mapped to relevant SDG(s)

Strand 2: Ireland

Strand element: recognising key changes

2.1 recognise how a pattern of settlement and plantation influenced identity on the island of Ireland, referring to one example of a pattern of settlement, such as the growth of towns, and one plantation

Strand element: Exploring people, culture and ideas

2.7 investigate the causes, course and consequences, nationally and internationally, of the Great Famine, and examine the significance of the Irish Diaspora

2.9 explain how the experience of women in Irish society changed during the twentieth century

Strand element: Applying historical thinking

2.13 analyse the evolution and development of Ireland's links with Europe

Strand 3: Europe and the wider world

Strand element: Recognising key changes

3.1 investigate the lives of people in one ancient or medieval civilisation of their choosing, explaining how the actions and/or achievements of that civilisation contributed to the history of Europe and/or the wider world

3.4 discuss the general causes and course of World War One or World War Two and the immediate and long-term impact of the war on people and nations

Strand element: Exploring people, culture and ideas

3.10 explore the significance of genocide, including the causes, course and consequences of the Holocaust

Strand element: Applying historical thinking

3.12 evaluate the role of a movement or organisation, such as the European Union or United Nations, in promoting international co-operation, justice and human rights

3.14 illustrate patterns of change across different time periods in a chosen theme relating to life and society (such as, Crime and punishment; Food and drink; Work and leisure; Fashion and appearance or Health and medicine)

Home Economics

The rationale for junior cycle Home Economics states that the central focus of the subject 'is achieving optimal, healthy and sustainable living for individuals, families and society'. In Home Economics students learn how to address 'practical, real-world, perennial problems' relating to 'food, nutrition, diet and health; family and social concerns; consumer issues; sustainability in the home; responsible family resource management; and textiles and clothing' in 'socially responsible ways'. The subject 'uses a systems approach to empower individuals and families with the knowledge and skills to address these real-life concerns of everyday living'. Home Economics 'supports the development of

students who are critical, creative thinkers and encourages students to be problem-solvers capable of making ethically and socially responsible decisions' (DES, 2017a: 4).

Both Development Education and junior cycle Home Economics share the central aim of developing 'students who are environmentally conscious and dedicated to a sustainable and responsible way of life' (DES, 2017a: 5).

Learning outcomes in the Home Economics specification are organized into three inter-connected contextual strands: Strand One: Food, health and culinary skills; Strand Two: Responsible family living; and Strand Three: Textiles and craft. The three contextual strands share common strand elements:

- Individual and family empowerment
- Health and wellbeing
- Sustainable and responsible living
- Consumer competence.

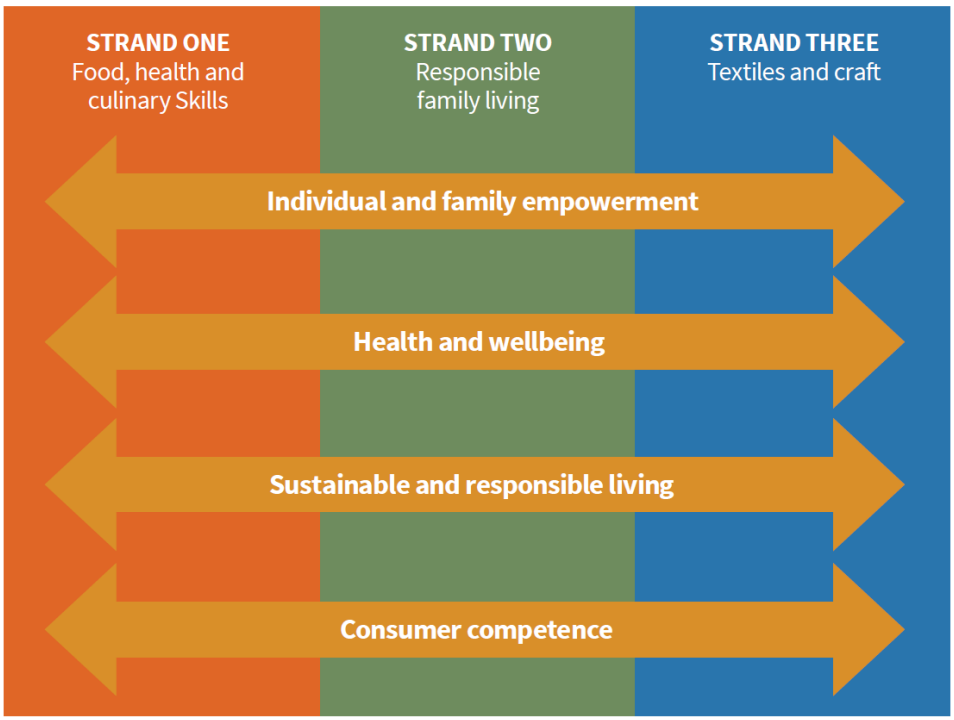


Figure 22 Junior Cycle Home Economics: strands and elements

Across the three strands, the learning outcomes in the *Sustainable and responsible living* strand element facilitate students to develop as future-oriented thinkers and environmentally-conscious citizens, committed to a sustainable and responsible way of life. The learning outcomes in the *Consumer competence* strand element focus on the development of life skills, so that students can

'become active, adaptable, consumer-literate citizens able to apply effective decision-making skills in everyday contexts'.

The learning outcomes in these two strand elements include content explicitly relevant to the Sustainable Development Goals. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes in other strand elements. To illustrate this range of possibilities, sample learning outcomes from each strand are mapped to relevant Sustainable Development Goal(s) below:

Sample Home Economics learning outcomes mapped to relevant SDG(s)

Strand one: Food, health and culinary skills

Strand element: Individual and family empowerment

1.1 Students should be able to identify the factors that affect personal food choices

Strand element: Health and wellbeing

1.8 Students should be able to discuss the elements of a healthy lifestyle

Strand element: Sustainable and responsible living

1.15 Students should be able to investigate the impact of their food choices from an ecological and ethical perspective

Strand element: Consumer competence

1.19 Students should be able to interpret the information found on a variety of food products using front-of-pack and back-of-pack food labels

Strand two: Responsible family living

Strand element: Individual and family empowerment

2.3 Students should be able to discuss family relationships and the importance of strengthening relationships between individuals and families

Strand element: Health and wellbeing

2.4 Students should be able to discuss the requirements of a safe and nurturing home environment

Strand element: Sustainable and responsible living

2.7 Students should be able to identify how individuals, families and households can contribute to sustainable and responsible living

Strand element: Consumer competence

2.11 Students should be able to debate consumers' rights and responsibilities

Strand three: Textiles and craft

Strand element: Sustainable and responsible living

3.6 Students should be able to demonstrate ways in which clothing and/or textile household items can be repaired, reused, re-purposed, recycled and upcycled

3.7 Students should be able to evaluate textile care procedures used in the home from an environmental perspective

3.8 Students should be able to discuss the influences of trends and choices on textile and clothing, including ethical and ecological considerations

Science

The rationale for junior cycle Science recognises one of the benefits of scientific literacy as 'giving students the capacity to make contributions to political, social and cultural life as thoughtful and active citizens who appreciate the cultural and ethical values of science'. This capacity facilitates young people to 'make informed decisions about many of the local, national and global challenges and opportunities they will be presented with' (DES, 2015d: 2).

The Science aim includes a reference to the value of scientific literacy in encouraging students to analyse science issues 'relevant to society, the environment and sustainability' (DES, 2015d: 4).

Learning outcomes in the Science specification are organized into five strands. Strand One: The Nature of Science is a unifying strand, so that Strand One learning outcomes, which focus on the relationship and connectedness between science and scientists to society, are integrated into teaching, learning and assessment associated with learning outcomes in the four contextual strands.

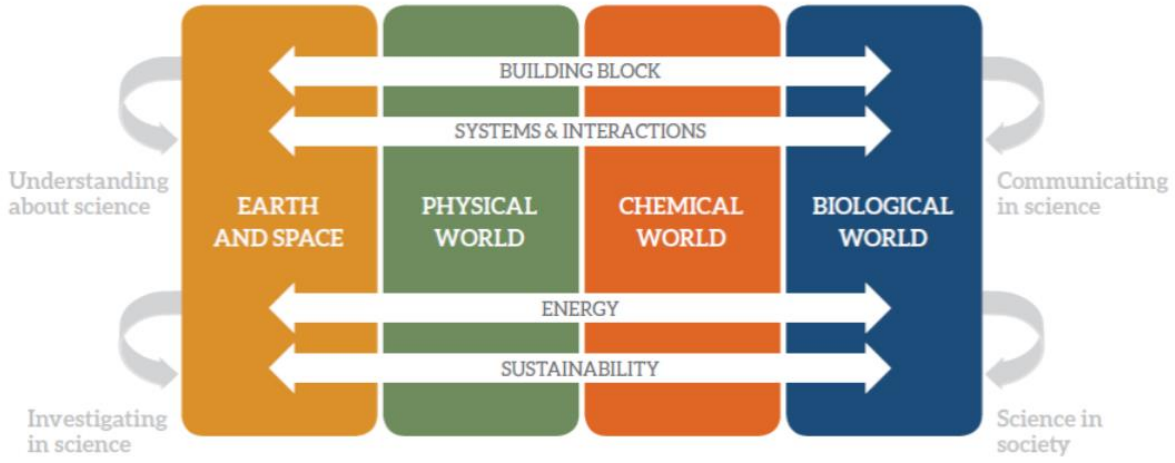


Figure 23 The elements of the contextual strands and the unifying strand, showing the integrated nature of the Science specification

A number of Strand One: The Nature of Science learning outcomes represents examples of an articulation of key competencies for sustainability (page 12) at a specification, rather than framework, level, for example:

Strand element: Investigating in science

1.5 Students should be able to review and reflect on the skills and thinking used in carrying out investigations, and apply their learning and skills to solving problems in unfamiliar contexts

Strand element: Communicating in science

1.6 Students should be able to conduct research relevant to a scientific issue, evaluate different sources of information including secondary data, understanding that a source may lack detail or show bias

Strand element: Science in society

1.10 Students should be able to appreciate the role of science in society; and its personal, social and global importance; and how society influences scientific research

The four contextual strands have four cross-cutting strand elements, one of which is Sustainability. The Sustainability strand element 'focuses on the concept of meeting the needs of the present without compromising the ability of future generations to meet their needs' (DES, 2015d: 13). The learning outcomes that fall under the Sustainability strand element in each of the four contextual strands include content explicitly relevant to the Sustainable Development Goals. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes in other strand elements. To illustrate this range of possibilities, sample learning outcomes from each strand are mapped to relevant Sustainable Development Goal(s) below:

<u>Sample</u> Science learning outcomes mapped to relevant SDG(s)

Strand Two: Earth and Space

Strand element: Energy

2.6 Students should be able to research energy sources; formulate and communicate an informed view of ways that current and future energy needs on Earth can be met.

Strand element: Sustainability

2.7 Students should be able to illustrate how earth processes and human factors influence the Earth's climate, evaluate effects of climate change and initiatives that attempt to address those effects

Strand Three: Chemical World

Strand element: Sustainability

3.10 Students should be able to evaluate how humans contribute to sustainability through extraction, use, disposal, and recycling of materials

Strand Four: Physical World

Strand element: Systems and interactions

4.4 Students should be able to research and discuss and technological application of physics in terms of scientific, societal and environmental impact

Strand element: Sustainability

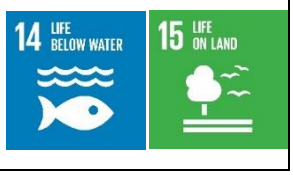
4.8 Students should be able to research and discuss the ethical and sustainability issues that arise from our generation and consumption of electricity

Strand Five: Biological World

Strand element: Systems and interactions

5.5 Students should be able to conduct a habitat study; research and investigate the adaptation, competition and interdependence of organisms with specific habitats and communities

Strand element: Sustainability



5.10 Students should be able to evaluate how humans can successfully conserve ecological biodiversity and contribute to global food production. Appreciate the benefits that people obtain from ecosystems.

Visual Art

The rationale for junior cycle Visual Art (formerly Art, Craft and Design) recognises the important contribution that the subject can make to 'promote divergent thinking' and 'respect for the work and opinions of others'. The rationale also acknowledges the 'highly visual' nature of contemporary society, and states that 'visual literacy is an essential requirement of active citizenship' because 'it enhances the young person's ability to interpret, critique and decode visual messages' (DES, 2016a: 4-5).

The Visual Art aim includes text about the importance of empowering students to engage with the world around them and to 'develop authentic, real-world problem-solving capacities' (DES, 2016a: 6).

Learning outcomes in the Visual Art specification are organized into three strands, with five cross-cutting strand elements.

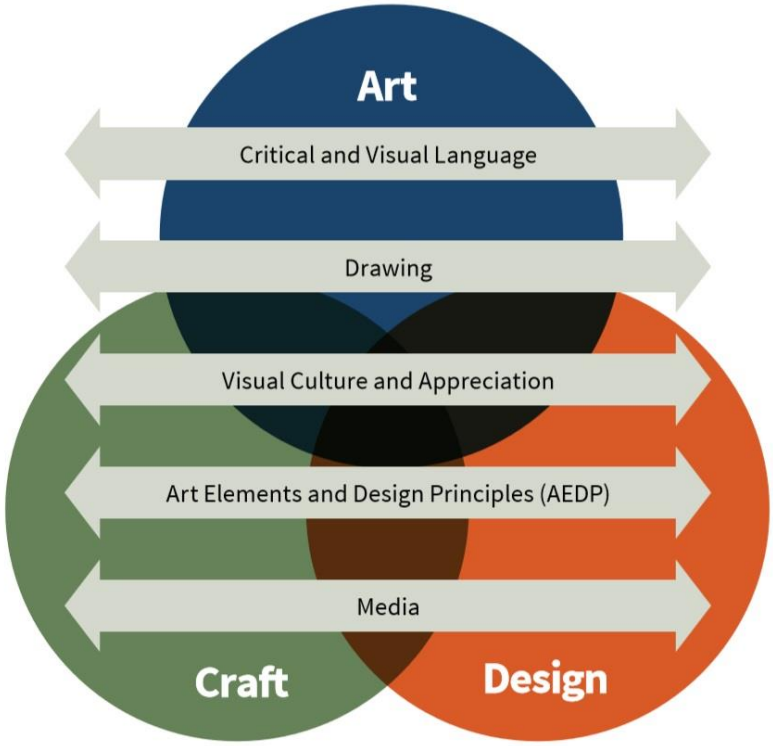


Figure 24 Visual Art strands and strand elements

It is useful to consider sample learning outcomes from each of the strands:

Sample Learning Outcomes
Students should be able to interpret the world and communicate ideas through visual means (Strand One: Art; Strand element: Drawing LO1.5)
Students should be able to debate the value that they and society place on an artwork (Strand One: Art; Strand element: Visual culture and appreciation LO1.8)
Students should be able to interpret the narrative, symbols and functions used in craftwork from their own and other world cultures (Strand Two: Craft; Strand element: Visual culture and appreciation LO2.8)
Students should be able to research the use of art elements and design principles in historical and contemporary craftwork from their own and other cultures (Strand Two: Craft; Strand element: Art elements and design principles LO2.11)
Students should be able to respond to and critique works of design using appropriate visual language (Strand Three: Design; Strand element: Critical and visual language LO3.3)
Students should be able to justify the design concepts made by historical and contemporary designers (Strand Three: Design; Strand element: Visual culture and appreciation LO3.9)

One of the cross-cutting strand elements in junior cycle Visual Art is *Visual culture and appreciation*. The *Visual culture and appreciation* strand element:

> *…recognises that the modern world has become a more visual place encompassing a wide range of visual stimuli such as architecture and urban design to advertising, new media, the internet, fine art, craft, design, photography, fashion and more. …At times, bombarded with images, students need to understand and decode these visual messages, as well as the visual culture of other societies too. This knowledge and understanding needs to be communicated [to students] (DES, 2016a: 11).*

Because of the focus of this strand element, the learning outcomes that fall under the heading of *Visual culture and appreciation* in each of the three strands have potential to engage students in topics relevant to the Sustainable Development Goals. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes in other strand elements.

Junior cycle short courses (levels 2 and 3)

Civic, Social and Political Education (CSPE): A citizenship course (level 3 short course)

CSPE is a core curriculum pillar of the junior cycle Wellbeing area of learning, which is 'about young people feeling confident, happy, healthy and connected' (DES, 2015a: 22)

> *Student wellbeing is present when students realise their abilities, take care of their physical wellbeing, can cope with the normal stresses of life, and have a sense of purpose and belonging to a wider community* (NCCA, 2017b: 17).

CSPE helps students understand the connections between their wellbeing and the wellbeing of others at local and global levels. Through CSPE students become aware of the relationship between individual wellness, wellness in relation to others and the wellness of the environment. CSPE also prompts students to consider the social, political, cultural and economic factors that affect individual and collective wellbeing, and develops their sense of responsibility for the wellbeing of others (NCCA, 2017b: 46; DES, 2016e: 4)

Schools must offer a minimum of 70 hours timetabled time to CSPE as part of their Wellbeing programme. Schools can dedicate more time to CSPE, and the NCCA's (2016) CSPE level 3 short course, which amounts to approximately 100 hours of study, represents an option for schools in this regard.

The rationale for the CSPE short course includes the following text, which is very relevant to the spirit and intent of ESD:

> *CSPE contributes to building the skills students will need to contribute positively to a democratic society and to promote sustainable living. It gives them an understanding of social, economic and political structures at local, national and global levels, and the opportunity to mage and create ways in which they can make a difference to the lives of individuals and communities. CSPE…helps students to question, critique and evaluate what is happening in the world; provides students with an understanding of their human rights and social responsibilities; prompts students to consider how to create a more sustainable future for all; fosters an awareness of what it means to live responsibly in a democracy; and most importantly, it places active reflective citizenship at the centre of the learning process by providing students with the opportunity to take action and influence change around local, national and global issues (DES, 2016e: 4).*

The aim of CSPE is to 'inform, inspire, empower and enable young people to participate as active citizens in contemporary society at local, national and global levels, based on an understanding of human rights and social responsibilities (DES, 2016e: 5).

Learning outcomes in the CSPE short course specification are organized into three strands, each with discrete strand elements.

- Strand One: Rights and responsibilities
- Strand Two: Global citizenship
- Strand Three: Exploring democracy

Strand One is a foundation strand and should be studied first as it is essential for students' successful engagement with Strands Two and Three.

The learning outcomes in Strand Two include content explicitly relevant to the Sustainable Development Goals. Additionally, there is potential for teachers, depending on their interests, skills and capacity to embed content related to the Sustainable Development Goals into their teaching of learning outcomes in other strand elements. To illustrate this range of possibilities, <u>sample</u> learning outcomes from each strand are mapped to relevant Sustainable Development Goal(s) below:

<u>Sample</u> CSPE learning outcomes mapped to relevant SDG(s)

Strand One: Rights and Responsibilities

Strand element: Human dignity: the basis for human rights

1.5 students should be able to access and interpret numerical data showing local and global distribution of basic resources and patterns of inequalities

Strand element: Human rights instruments

1.8 students should be able to communicate their understanding of how the UDHR, UNCRC and ECHR apply to their lives, in terms of both their rights and responsibilities

Strand Two: Global Citizenship

Strand element: Sustainability

2.4 students should be able to discuss three or more sustainable living strategies they can employ in their lives

Strand element: Local and global development

2.7 students should be able to discuss, with evidence, the positive and negative effects of development in their local area

Strand element: Effecting global change

2.11 students should be able to examine a campaign for change in the area of sustainability and assess reasons why it has or has not been successful

Strand Three: Exploring Democracy

Strand element: The meaning of democracy

3.4 students should be able to use the correct terminology to describe Irish and European democratic institutions, structures, political parties and roles

Strand element: The law and the citizen

3.10 students should be able to investigate how individuals or groups have used the law to bring about change in society

Strand element: The role of the media in a democracy

3.12 examine case studies of the use of digital or other media in one of the following:

- a social justice movement
- a political election or referendum
- a criminal investigation
- an environmental movement

Level 2 Short Courses

Students taking level 2 short course should be following a personalised Level 2 Learning Programme (L2LP) alongside other curriculum components from Level 2, and possibly one or two from Level 3. There are two NCCA Level 2 short courses at present, A personal project; Caring for Animals and CSI: Exploring forensic science.

A Personal Project: Caring for Animals (level 2 short course)

This short course aims to develop the student's knowledge, as well as cognitive, social and practical skills in the context of learning about and caring for an animal of interest (DES, 2016c: 6). Learning outcomes in the Caring for Animals short course specification are organized into four strands, each with discrete strand elements.

Strand One: Learning about dogs

Strand Two: Caring for dogs

Strand Three: Dogs in the home

Strand Four: Dogs in the community

Taken in their entirety, the learning outcomes from across the course can be linked to Sustainable Development Goal 15 (Life on land).

Additionally, there is potential to address several other Goals through the teaching of learning outcomes in Strands One and Two, as follows:

<u>Sample</u> Caring for Animals learning outcomes mapped to relevant SDG(s)

Strand One: Learning about dogs

Strand element: Benefits of having a dog

1.5 students should be able to work out an exercise plan to benefit both dogs and their owners

Strand 2: Caring for Dogs

Strand element: Food

2.2 students should be able to draw comparisons with healthy food for humans

Strand element: Exercise

2.10 students should be able to make comparisons with the benefits of exercise for humans

Strand element: Shelter

2.14 students should be able to draw comparisons with humans needing shelter

CSI: Exploring forensic science

This short course aims to facilitate the development of basic science process skills and other key skills for life and learning such as working collaboratively, planning sequentially and thinking logically. The skills gained through a focus on basic science are ones that can be used by the student in many areas of his/her future life (DES, 2016d: 6).

Learning outcomes in the CSI short course specification are organized into four strands, each with discrete strand elements.

Strand One: The work of a forensic scientist

Strand Two: Scene of the crime

Strand Three: Scientific laboratory testing

Strand Four: Concluding the inquiry

Taken in their entirety, the learning outcomes from across the course can be linked to Sustainable Development Goal 16 (Peace, justice and strong institutions).

The subject and short course case studies presented here do not represent an exhaustive study of all opportunities for teaching, learning and assessment about the Sustainable Development Goals in the junior cycle programme. Additional opportunities exist, not only in the subjects and short courses that have been included here as case studies, but also in additional subjects and short courses. For example, in junior cycle Geography (which has a strand entitled Exploring people, place and change and a cross-cutting strand element called *Sustainability*). The case studies in this section should be viewed as a snapshot of the possibilities in the junior cycle curriculum programme, but as has been said previously, teacher interest, skills and capacity are the main factors in dictating whether topics relating to one or more of the Sustainable Development Goals can be valuably embedded in most disciplines.

3.3 Senior cycle case studies

The senior cycle programme is made up of thirty-four subjects. Each of these belongs to a subject group as shown in Table 14 below. Two subjects, Home Economics and Physics and Chemistry, belong to two groups.

Languages group	English, French, German, Irish, Italian, Latin, Greek, Spanish, Arabic, Japanese, Russian, Classical Studies, Hebrew Studies
Science group	Applied Mathematics, Biology, Chemistry, Mathematics, Physics, Physics and Chemistry
Business studies group	Accounting, Business, Economics
Applied science group	Agricultural Science, Construction Studies, Engineering, Home Economics, Physics and Chemistry, Design and Communication Graphics
Social studies group	Art, Geography, History, Home Economics, Music, Politics and Society

Table 14 Senior cycle subject groups

The subjects highlighted in Table 14 are those chosen as senior cycle case studies, using the selection criteria outlined on page 13.

Senior cycle subjects

Agricultural Science

Agricultural Science is the study of the science and technology underlying the principles and practices of modern agriculture. It is a scientific approach to the knowledge and understanding, skills and attitudes that affect the long-term sustainability of natural resources – the land, plants, and animals – and emphasises the managed use of these resources for the economic and social benefit of humankind.

The NCCA has developed a new senior cycle Agricultural Science specification for implementation from September 2019, with the first Leaving Certificate examination in 2021. The previous Agricultural Science syllabus was in existence for over forty-years, and in 2015, 7,672 students (13.9% of all

students who sat the Leaving Certificate examinations) studied the subject, although it is hoped that with publication and implementation of the new updated specification these numbers may increase in time.

The rationale for the new Agricultural Science states that through engagement with the subject learners:

> *…develop an understanding of human use of the Earth's natural resources and environment for the production of food and non-food materials is developed. The science and technology employed is identified and explored, and an awareness of the need to enhance environmental quality through greater scientific understanding of agricultural principles and practices is promoted. The role and importance of strategies and policies for the continued sustainable development and growth of the agri-food industry are recognised, whilst understanding the importance of biodiversity, animal welfare and care of the environment (NCCA, 2016a: 5).*

Agricultural Science includes aims which are very relevant to ESD, these are to enable learners to:

- appreciate the natural environment and human interactions with it and the sustainable use of its resources, recognising the need for a rational and balanced approach to the exploitation of these resources in a local and global context
- recognise the need for, and global importance of, relevant strategies and policies for the agri-food industry and identify opportunities for innovation and entrepreneurship in the context of local, regional and world markets
- develop their scientific knowledge and skills, in the context of agricultural practices, and increase their awareness of health and safety issues associated with these practices (NCCA, 2016a: 7).

The objectives laid out in the specification state that learners should:

- develop an ecological sense of the role and place of humans in the provision of food and non-food materials
- recognise the impact of the environment on various agricultural practices and appreciate how the application of science and technology may be both beneficial and detrimental to the individual, the community and the environment
- become aware of the contribution of agriculture to the economy of the locality and the nation and its importance in EU and world contexts
- make informed evaluations of contemporary agricultural science issues locally and globally

- understand that the study and practice of science are co-operative and cumulative activities which are subject to social, economic, technological, ethical and cultural influences and limitations
- develop independent thinking and self-directed learning skills through active engagement in their own learning and through project work
- understand the need for safety in conducting laboratory and field investigations (NCCA, 2016a: 7).

Learning outcomes in Agricultural Science are organized into four strands, with seven cross-cutting themes, as illustrated below in Figure 24. Strand One: Scientific Practices, is an integrated strand, so that Strand One learning outcomes, which focus on how science works; on scientific investigation; and on the role and contribution of science to agriculture, are integrated into teaching, learning and assessment associated with learning outcomes in the other three strands.

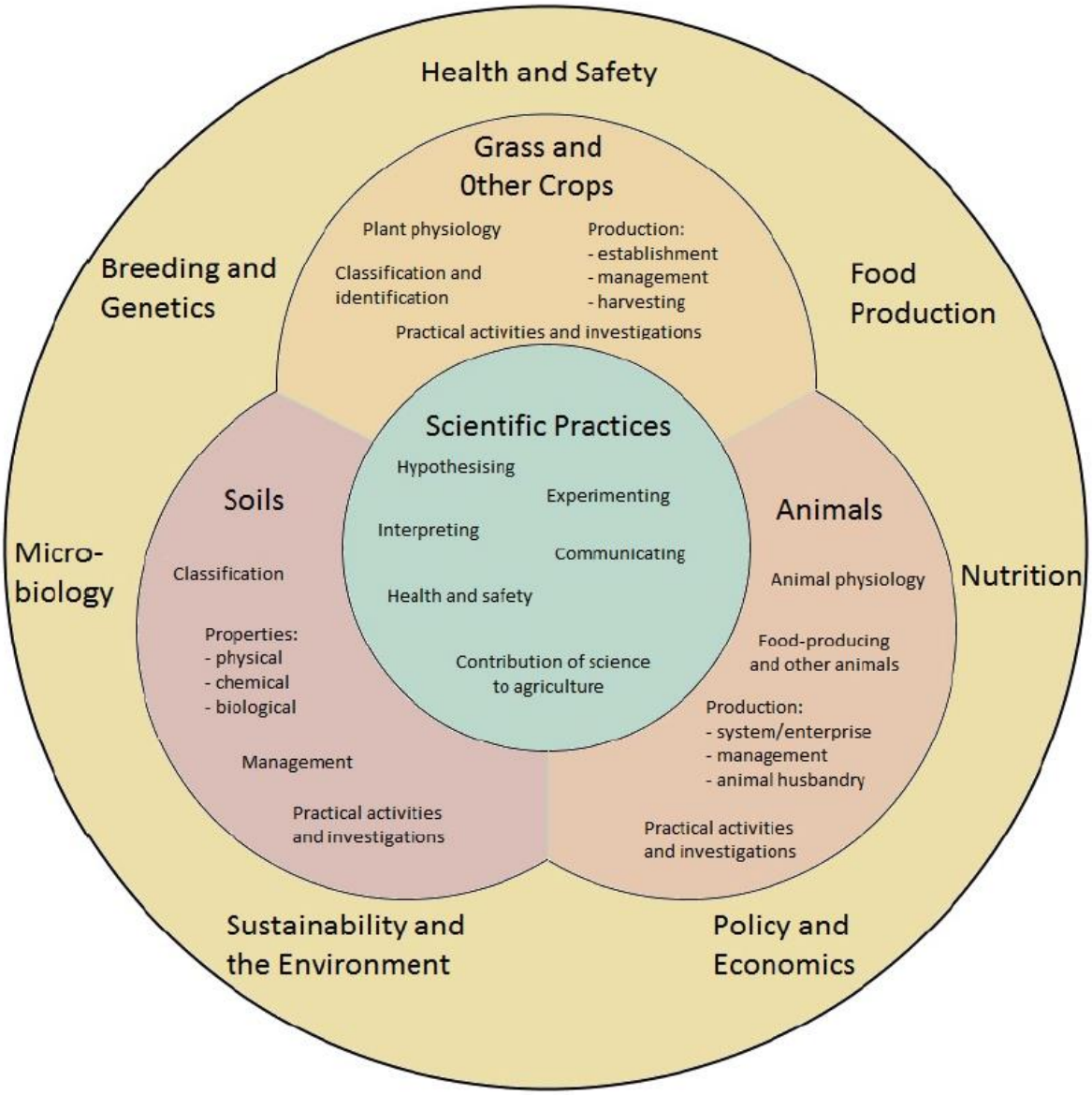


Figure 25 Agricultural Science strands and cross-cutting themes

This specification includes a section which references the National Strategy on Education for Sustainable Development, and states that Agricultural Science:

> *supports education for sustainable development by integrating the key skills o senior cycle throughout the strands. Sustainability and the environment is one of the cross-cutting themes in the four strands of the specification. …By linking and integrating the learning across the four strands, the interdependence of the scientific, economic and social dimensions of Agricultural Science is reinforced. By considering the impact of human activity and the importance of responsible management in relation to soils (Section 2.3), crops (Section3.3) and animals (Section 4.3), learners develop awareness of the need for sustainable development and use of natural resources at local, national and global levels (NCCA, 2016a: 10).*

To investigate the opportunities for teaching and learning in relation to the Sustainable Development Goals, sample learning outcomes from the four strands are presented below:

<u>Sample</u> Agricultural Science learning outcomes mapped to relevant SDG(s)

Strand One: Scientific practices

LO 1.5: Students should be able to identify health and safety hazards associated with agricultural practices and discuss controls and precautions necessary to prevent accidents, injury and ill health

Strand Two: Soils

LO 2.3: Students should be able to discuss the importance of good soil management in terms of drainage, soil health and fertility, soil sampling, testing and analysis of results, fertiliser or slurry application, sustainable land use and management, impact of animals on the chemical, physical and biological properties of soil, soil compaction, pollution and conservation

Strand Three: Grass and other crops

LO 3.2: Students should be able to list the major food and energy crops grown in Ireland

LO 3.3.2

Students should be able to compare conventional and organic farming

debate the arguments for and against high energy crops vs sustainable management

Strand Four: Animals

LO 4.3: Students should be able to discuss the environmental and health and safety considerations associated with animal production and processing

English

Leaving Certificate English aims to develop in students 'a mature and critical literacy to prepare them for the responsibilities and challenges of adult life in all contexts' and 'an awareness of the value of literature…for enhancing their sense of cultural identity'. The syllabus states that 'developing control and power over language is the most essential educational achievement for all students if they are to become confident, thoughtful and discriminating adults and citizens' (DES, 1998: 5-6).

The Leaving Certificate English syllabus acknowledges the importance of language learning for when the student leaves school, becomes an adult and citizen. ESD is likewise concerned with the future, but also with the present, capacity of students to engage and participate in their local and global communities.

The senior cycle English syllabus is structured into five general headings, with two cross-cutting, integrated elements, as portrayed in Figure 26 below:

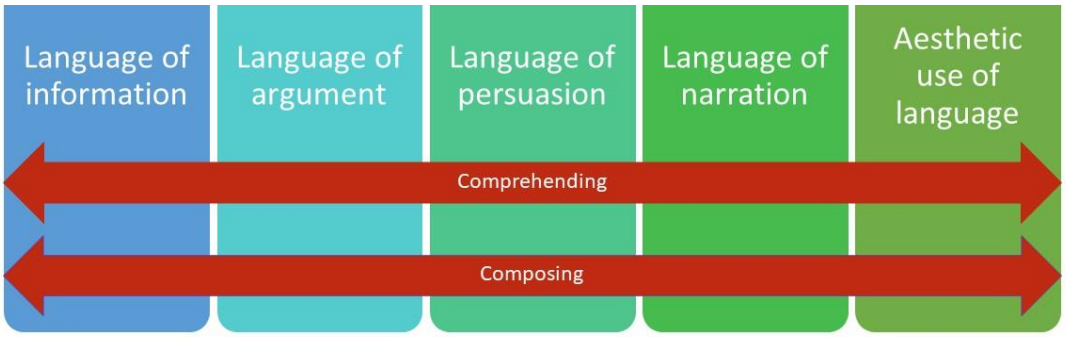


Figure 26 Structure of Leaving Certificate English syllabus

To better understand what is intended by the five general headings, it is useful to look at descriptors for each:

General heading descriptors
Language of information Students should encounter a range of texts composed for the dominant purpose of communicating information, e.g. reports, records, memos, bulletins, abstracts, media accounts, documentary films.
Language of argument Students should encounter a range of texts with an argumentative function. The range of texts should encompass material which offer models of both deductive reasoning and inductive reasoning as used in journalistic, philosophical, scientific and legal contexts.

Language of persuasion Students should encounter a range of texts which have a persuasive function, e.g. political speeches, advertising in all media, satiric texts, some forms of journalism.
Language of narration Students should encounter a wide range of texts which have predominately a narrative function. This should involve students in encountering narratives of all kinds, e.g. short stories, novels, drama texts, autobiographies, biographies, travel-books and films.
Aesthetic use of language Students should encounter a wide range of texts in a variety of literary genres for personal recreation and aesthetic pleasure. This would include engaging with fiction, drama, essay, poetry and film in an imaginative, responsive and critical manner.

The five general headings are divided into comprehending and composing learning outcomes, samples of which are provided below:

Language of information *Composing* 4.1.2 Students should be able to compose accurately in a range of information genres:	Records, memos, minutes, notices, precis Letters of all kinds Reports and research projects Various media scripts and newspaper reports
Language of argument *Comprehending* 4.2.1[11] Students should be able to: Distinguish between opinion, anecdote and evidence Evaluate the validity of an argument Attempt to identify assumptions present Outline the values being asserted	
Language of persuasion *Comprehending* 4.3.1 Students should be able to: Identify the techniques being used to persuade e.g. tone, image, rhythm, choice of words, selection of detail Evaluate the impact of a passage in achieving its desired effect Indicate to which audience it is addressed	

[11] Only some aspects of learning outcome 4.2.1 are presented here.

Analyze the value-system advocated and/or implied by the text Outline whose interests it serves	
Language of narration *Composing* 4.4.2 Students should be able to compose in a range of contexts:	Anecdote Parable, Fable Short Story Autobiographical sketch Scripts Dialogues
Aesthetic use of language *Composing* 4.5.2 Students should be able to: Compose within the aesthetic forms encountered Compose "interventions", i.e. alternative scenarios based on texts studied Keep Response Journals - expressive of their growing acquaintance with a text over a period of time Compose analytical and coherent essays relative to a text	

In general, the learning outcomes in Leaving Certificate English are sufficiently broad, skills-based and process oriented to ensure that students can encounter key competencies for sustainability through teaching, learning and assessment. Comprehending and composing in a variety of genres, both fiction and non-fiction, can facilitate students to grapple with some of the complex issues suggested by the 17 Sustainable Development Goals, such as climate change, poverty, inequality, migration, stereotyping and discrimination. Some years these themes or issues are strongly present in the prescribed Leaving Certificate text list, and the unseen texts also present opportunities. However, the scope for addressing content related to specific Sustainable Development Goals is largely dependent upon the professional capacity, interest and disposition of the teacher. Leaving Certificate English is an open door for teaching, learning and assessment about and for sustainable development and teachers are the key to ensuring these opportunities are capitalised upon.

Geography

The rationale for senior cycle Geography states that the subject is 'concerned with the study of people and their environment,' and as such 'examines the changing interrelationships between the physical and human worlds'. Through studying Geography students gain the skills to 'help them make informed judgements about issues at local, national, and international levels' (DES, 2003a: 2).

The aims of senior cycle Geography are all relevant in the context of ESD:

1. To develop a knowledge and understanding of a selection of contrasting physical and human (social, economic, and cultural) environments and of the relationships that exist between them.
2. To promote an awareness of the spatial, structural, and temporal patterns of environmental phenomena, both physical and human, at a variety of scales, and to realise that these patterns can change with time.
3. To understand the opportunities for, and challenges of, global interdependence.
4. To promote the conservation and sustained management of the earth's resources for the welfare and happiness of its inhabitants and for future generations.
5. To recognise, and be sensitive to other people and their culture, here in Ireland and elsewhere.
6. To develop a variety of geographical skills which can be applied to the world of work and to many other aspects of life.
7. To develop and promote active citizenship and to encourage informed participation, through lifelong learning, in society at local, national, European and global level.
8. To encourage the use of information and communication technologies in the teaching and learning of geography.
9. To assist students to become well-informed and responsible citizens and to enable them to progress to further studies or to enter the world of work.
10. To provide students, through their study of geography, with an interesting and enjoyable experience and imbue in them a lifelong love of their natural and cultural environment (DES, 2003a: 2).

Learning outcomes in the senior cycle Geography syllabus are presented in core, optional and elective units. All students engage with the learning outcomes in the core units and chose one of the optional units. Students taking the higher-level course engage with the learning outcomes one of the elective units.

Core Unit 1: Patterns and processes in the physical environment

Core Unit 2: Regional geography

Core Unit 3: Geographical investigation and skills

Elective Unit 4: Patterns and processes in economic activities

Elective Unit 5: Patterns and processes in the human environment

Optional Unit 6: Global interdependence

Optional Unit 7: Geoecology

Optional Unit 8: Culture and identity

Optional Unit 9: The atmosphere-ocean environment

To illustrate the range of ESD content related possibilities, sample ordinary level (OL) and higher-level (HL) learning outcomes from two core units, the two elective units, and the four optional units are mapped to relevant Sustainable Development Goal(s) below:

Sample Geography learning outcomes mapped to relevant SDG(s)

Core Unit 1: Patterns and processes in the physical environment

OL: Students should be able to show how human activities can affect these processes [i.e. landform developments]

HL: Students should be able to assess, at different scales, the impact of human activity on the physical processes at work on the landscape

In the context of these learning outcomes, students are expected to study one of the following:

- mass movement processes and the impact of overgrazing, overcropping and deforestation
- river processes and the impact of hydro-electric dams, canalisation and flood control measures
- coastal processes and the impact of recreational pressures, coastal defence work, conservation and management measures.

Core Unit 2: Regional geography

OL: Students should be able to show how physical, economic, and human processes interact within regions in Ireland, Europe and in one continental / sub continental region

HL: Students should be able to show a detailed understanding of how physical, economic, and human processes interact in Irish and European regions and in one continental / sub continental region

In the context of these learning outcomes, students are expected to study one continental or sub continental region, including the:

- physical processes, e.g. climate, soil, relief and drainage
- economic processes,
- primary activities e.g. agriculture, forestry, fishing, mining/energy
- secondary activities e.g. patterns in manufacturing activities
- tertiary activities, e.g. transport and tourism.
- human processes, e.g. language, religion, urban and rural development and population dynamics.

Elective Unit 4: Patterns and processes in economic activities

OL: Students should be able to examine the environmental impact of economic activities

HL: Students should be able to assess the environmental impact of economic activities at different scales

In the context of these learning outcomes, students are expected to study:

- the use of renewable and non-renewable resources in the economy
- the impact of the burning of fossil fuels and the use of alternative energy sources
- environmental pollution at a local/national and global scale
- sustainable economic development so as to control its environmental impact. Students should examine past experiences, future prospects and the necessity for environmental impact studies.
- conflicts that may develop between local and global economic interests and environmental interests. Students should be familiar with the issues relating to at least two examples.

Elective Unit 5: Patterns and processes in the human environment

OL: Students should be able to describe the impact of population movements

HL: Students should be able to assess and evaluate the varying impact of population movements

In the context of these learning outcomes, students are expected to study:

- changing migration patterns in Ireland
- migration policy in Ireland and the EU
- ethnic, racial and religious issues which arise from migration
- contrasting impacts of rural/urban migration in the developed and developing regions

Optional Unit 6: Global interdependence

HL: Students should be able to discuss human development as a focus for change

In the context of this learning outcome, students are expected to study:

- the weight of national debt and its impact on the cycle of poverty
- the "aid" debate. Who benefits?
- the role of NGOs
- land ownership patterns and their impact on development
- decision-making processes and levels of participation
- levels of exploitation at local and global scales
- differing gender roles in society

Optional Unit 7: Geoecology

HL: Students should be able to describe the combination of processes affecting soil characteristics

In the context of this learning outcome, students are expected to make a general study of:

- the global pattern of soils
- soil processes including weathering, soil erosion, leaching, humidification, podzolisation, laterisation, calcification
- human interference with soil characteristics including: – over-cropping and over-grazing – desertification and conservation

Optional Unit 8: Culture and identity

HL: Students should be able to recognise ethnic groupings as a classification of population

In the context of this learning outcome, students are expected to study:

- racial groupings within the global population to include

– characteristics and locational patterns

– multi-racial societies

– racial mixing

– racial conflict

- an understanding of the impact of colonialism and migration on racial patterns

Optional Unit 9: The atmosphere-ocean environment

HL: Students should be able to assess the influence of climatic characteristics on economic development

In the context of this learning outcome, students are expected to study:

- the influence of rainfall levels on agricultural activities and domestic water supplies
- the impact of drought and desertification
- the impact of climate on tourism

Politics and Society

Recommendation 10 of the National Strategy on Education for Sustainable Development (2014-2020) states: 'Politics and Society' should be introduced as a new Leaving Certificate subject when the NCCA has provided advice to the Minister for Education and Skills on a number of technical issues'. Politics and Society was implemented as a full, optional senior cycle subject (at higher and ordinary levels) with an initial cohort of 41 schools in September 2016. Approximately 900 students are participating in the first cycle of the subject. These students will carry out their Citizenship Projects (=20%) and sit the written SEC examination (=80%) in June 2018. In late 2017, the DES opened the subject up for implementation in additional post-primary schools from September 2018. This means that in addition to the 41 schools who are currently doing Politics and Society with both 5th and 6th year students, an further 67 schools will be offering Politics and Society on their senior cycle timetables from Sept 2018. An anticipated 2,500 students will conclude their study of Politics and Society in June 2020.

As a subject area, Politics and Society draws on the content knowledge of sociology, anthropology, political studies and philosophy. The short course in Civic, Social and Political Education (CSPE), one of the core pillars of the junior cycle Wellbeing area of learning, 'provides a foundation in the knowledge, skills and attitudes required for studying Politics and Society at senior cycle' (DES, 2016b:7, 9). The CSPE/Politics and Society case studies, despite the title difference, are therefore included as a demonstration of continuity between levels.

The rationale in the Politics and Society specification outlines the skills that young people need to deal with the 'changing local, national and global environment', as:

- skills in critically assessing information and its sources and in gathering and processing information
- intercultural skills to enable them to communicate and work with people from diverse backgrounds in employment and in other settings
- an understanding of the processes of globalisation and individualisation and their opportunities and challenges
- the imagination to think creatively and to propose new and alternative futures
- a willingness to play an active role in their society
- a disposition towards taking responsibility for the outcomes of their actions (DES, 2016b: 7)

These skills overlap with much of what is intended by UNESCOs key competencies for sustainability (see page 12).

The aim of Politics and Society is 'to develop the learner's capacity to engage in reflective and active citizenship, informed by the insights and skills of social and political sciences' (DES, 2016b: 8). The objectives of Politics and Society, given below, are very much in keeping with the spirt and intent of ESD:

To develop:

- an understanding of the social systems within which people act: locally, nationally and more widely
- an understanding of concepts which underpin contemporary systems of government and of the diverse models for making these concepts operational
- an understanding of and a respect for human rights and responsibilities, for human dignity and for democratic modes of governance

- an understanding of and a respect for sustainable development
- a commitment to and a capacity for active participation in the learner's social and political worlds
- a commitment to and a capacity for critical, discursive and independent thinking
- a commitment to and a capacity for engagement in peaceful and democratic means of resolving conflicts
- a sense of care for others and a respect for and a valuing of diversity in all areas of human life within the parameters of human rights principles
- the capacity to analyse and interpret qualitative and quantitative social and political research data, and to use such data carefully in forming opinions and coming to conclusions (DES, 2016b: 8).

Learning outcomes in senior cycle Politics and Society are organized into four strands:

STRAND 1 Power and decision-making	**STRAND 2** Active citizenship
STRAND 3 Human rights and responsibilities	**STRAND 4** Globalisation and localisation

Figure 27 Strands from the Leaving Certificate Politics and Society specification

The specification highlights cross-cutting features which permeate the learning outcomes in the four strands. These are:

- the discussion of the local, national, European and global dimensions of the issues studied
- the exploration of the similarities and differences in social and political practices around the world
- the analysis and interpretation of qualitative and quantitative social and political research data
- the use of active, participatory, democratic and discursive practices in teaching and learning (DES, 2016b: 10)

These cross-cutting features are very relevant to the spirit and intent of ESD, and indeed they link to the concepts of universality and indivisibility which are essential to the implementation of the Sustainable Development Goals.

Strand 1 addresses foundational concepts and should be studied first. Strand 2 focuses on some of the key skills relevant to Politics and Society: skills in coming to reflective and informed decisions through debating and discussing ideas with other people and skills in being an effective active citizen. Many of the learning outcomes in Strand 2 are reflective of aspects of the key competencies for

sustainability (see page 12). Strands 3 and 4 provide opportunities to apply the foundational concepts and skills of Politics and Society in increasing depth. Each strand is divided into two topics, as follows:

Strand 1: Power and decision-making

Topic 1 Power and decision-making in school

Topic 2 Power and decision-making at national and European level

Strand 2: Active citizenship

Topic 3 Effectively contributing to communities

Topic 4 Rights and responsibilities in communication with others

Strand 3: Human rights and responsibilities

Topic 5 Human rights and responsibilities in Ireland

Topic 6 Human rights and responsibilities in Europe and the wider world

Strand 4: Globalisation and localisation

Topic 7 Globalisation and identity

Topic 8 Sustainable development

This specification includes a section which references the National Strategy on Education for Sustainable Development, and states that Politics and Society:

> *…supports education for sustainable development through the key skills of senior cycle that are integrated throughout the four strands. The knowledge and skills developed through all four strands…are all integral to education for sustainable development. In addition, topic 8, Sustainable development provides excellent opportunities for students to engage with this important area of learning (DES, 2016b: 11).*

To investigate the opportunities for teaching and learning in relation to the Sustainable Development Goals, sample learning outcomes from the four strands are presented below:

<u>Sample</u> Politics and Society learning outcomes mapped to relevant SDG(s)

Strand 1: Power and decision-making

Topic 2 Power and decision-making at national and European level

LO 2.3: Students should be able to define what is meant by 'patriarchy' and illustrate the view that, in a patriarchy, gender is an important way of categorising who has and who has not got power

Strand 2: Active citizenship

Topic 3 Effectively contributing to communities

LO 3.3: Students should be able to undertake a form of action agreed with an initiative, group or organisation that is involved in politics, human rights, cultural diversity or sustainable development or develop a new initiative, group or organisation working in one of these areas

Topic 4 Rights and responsibilities in communication with others

LO 4.5: Students should be able to identify how the skills of democratic participation in small groups could be appropriately used in local, national, European and wider world contexts

Strand 3: Human rights and responsibilities

Topic 5 Human rights and responsibilities in Ireland

LO 5.6: Students should be able to engage with different viewpoints and evaluate and use evidence to come to a conclusion as to whether the right to education is enjoyed equally by everyone in Ireland

Topic 6 Human rights and responsibilities in Europe and the wider world

LO 6.3 Students should be able to identify what it means for states to agree to implement economic, social and cultural rights within the framework of international cooperation

Strand 4: Globalisation and localisation

Topic 7 Globalisation and identity

LO 7.2: Students should be able to draw on examples from their own environment and from qualitative and quantitative research data to explore the role of migration and travel in [the] process of cultural mixing and adaptation

LO 7.6: describe the role of supranational bodies, (including, where appropriate, the International Monetary Fund, World Trade Organisation, World Bank and the United Nations Development Programme) in the process of decision-making in relation to a policy that impacts upon young people

Topic 8 Sustainable development

LO 8.1: Students should be able to -

describe how their own purchases contribute to or address environmental justice, global poverty or underdevelopment through ethically traded goods or through terms of trade dominated by western companies

describe how their own energy use contributes to climate change, and the impact of climate change on people in less-developed countries

LO 8.3 : describe in brief and general terms the contribution of André Gunder Frank, Vandana Shiva and Seán McDonagh to the discussions in this topic and the contexts in which they made their contributions

The senior cycle case study subjects presented in this section do not represent an exhaustive study of all opportunities for teaching, learning and assessment about the Sustainable Development Goals in the senior cycle programme. Additional opportunities exist, not only in the subjects that have been included as case studies, but also in other subjects. For example, in the new senior cycle Economics specification (which includes a unit in its unifying strand entitled 'Economic, Social and Environmental Sustainability') and the Religious Education syllabus (with optional sections entitled 'Moral decision making' and 'Issues of justice and peace'). The case studies in this section should be viewed as a snapshot of the possibilities in the senior cycle curriculum programme, but as has been said previously, teacher interest, skills and capacity are the main factors in dictating whether topics relating to one or more of the Sustainable Development Goals can be valuably embedded in most disciplines.

4. Conclusions and recommendations

As outlined in section one, the approach taken in this study was to use the mapping of curriculum frameworks against UNESCO's key competencies for sustainability, and the identification of opportunities for teaching and learning about the Sustainable Development Goals at curriculum syllabus/specification level as a way of:

(1) identifying existing good practice

(2) making recommendations to ensure future curriculum review and development takes appropriate cognisance of ESD.

Good practice

At curriculum framework level the following aspects help to facilitate a situation where students can encounter key competencies for sustainability:

- An understanding of the need for learning outcomes which incorporate the overarching vision, principles, statements of learning and key skills.
- The inclusion of key skills. Key skills are the main driver for pedagogy that is collaborative, democratic and engaged and they serve to create opportunities for teachers to employ active methodologies which in turn have the potential to contribute to student engagement with UNESCO key competencies.
- The integration of wellbeing. Wellbeing is included as a theme in early childhood, but, is more broadly defined and integrated at junior cycle level where it exists as a principle, can be linked to several statements of learning and key skills, and is present as a distinct area of learning (CSPE, PE & SPHE). The broad definition at junior cycle, wellbeing as an individual and collective endeavour, is both innovative and vitally important for the positioning of sustainability/ESD.

At syllabus/specification level the following aspects help to facilitate a situation where students can encounter key competencies for sustainability and Sustainable Development Goals related content:

- The National Strategy on Education for Sustainable Development (2014-2020) has been an important policy-level driver for the progress that has been made to date in relation to the integration of key competencies for sustainability and content topics related to the Sustainable Development Goals. The influence of the strategy on curriculum development can be seen in the

inclusion of references to ESD in background papers (e.g. senior cycle Visual Art) and in curriculum specifications (e.g. junior cycle Business Studies, senior cycle Politics and Society etc).

- The articulation of rich learning outcomes which balance knowledge, skills and values
- The development of curriculum specifications with learning outcomes which demand teaching/learning and assessment about sustainability topics (e.g. junior cycle Business Studies, CSPE and Science; senior cycle Agricultural Science and Politics and Society). It is notable that other specifications facilitate teaching/learning and assessment about sustainability topics (e.g. new primary Language specification, junior cycle Visual Art etc.). This creates a situation where students have multiple opportunities to encounter Sustainable Development Goals related content (together with key competences for sustainability) across different subject areas.
- The inclusion of Classroom-Based Assessments (CBAs) at junior cycle level. CBAs allow students to identify an area of interest and assesses the skills they demonstrate. CBAs mean that teachers can support those students who have an interest in appropriate content, research and actions related to the Sustainable Development Goals.

Additionally, the NCCA has been increasingly proactive in engaging with non-governmental organisations/civil society organisations and experts working on sustainability and ESD. There is evidence of this engagement in the submissions that are received in response to consultations about draft background papers and specifications, in the involvement of individuals with an ESD expertise in specification development groups and in the NCCA's membership of the advisory group for the National Strategy on ESD.

While this study underscores the responsibility that the NCCA has in ensuring curriculum documents that take account of the realities of our world, there are additional stakeholders who can lead on making sure that the curriculum as experienced is in line with that which is intended in curriculum documentation. Throughout this study, the important role of teachers in integrating education *about* and *for* sustainable development has been highlighted. Teachers need to be supported in their ESD endeavours:

> *More work needs to be done to reorient teacher education to approach ESD in its content and its teaching and learning methodologies. … In order for teachers to be prepared to facilitate ESD, they must develop sustainability key competencies (including knowledge, skills, attitudes, values, motivation and commitment). But in addition to general sustainability competencies, they also need ESD competencies, which can be described as a teacher's capacity to help people develop sustainability competencies through a range of innovative teaching and learning practices (UNESCO, 2017: 51).*

In the Irish context, this UNESCO quote points to the important ESD supports that must be offered across the continuum of teacher professional development, from initial teacher education to the activities of professional bodies such as the Teaching Council, support services such as the PDST and JCT, and teacher professional networks, for example, the various post-primary subject associations. Teachers should also be encouraged to access the often valuable ESD supports that might be available through non-governmental or civil society organisations.

While acknowledging the important role of teachers and teacher educators, as the body responsible for advising the Minister for Education and Skills about matters relating to curriculum and assessment, the NCCA has a critical part to play in ensuring that children and young people are not educated with their backs to our world. It is with this task in mind that the following recommendations are made:

Recommendations

The NCCA should:

- Ensure all NCCA boards and development groups have a brief with terms of reference inclusive of ESD.
- Provide relevant ESD related training inputs for NCCA staff and members of boards/development groups.
- Strengthen the ESD related components in existing curriculum framework documents (e.g. senior cycle key skills) and include these in new frameworks as they are developed.
- Ensure alignment between framework documents and specifications at different levels and between levels, this is particularly relevant in the context of planned developments at primary and senior cycle levels.
- Actively integrate wellbeing across all levels, ensuring a core role for the concept of the child/young person as a citizen now (i.e. as outlined in the Aistear principle and evidenced by the inclusion of CSPE in the wellbeing area of learning at junior cycle).

- Carry out more frequent reviews, especially when a new specification has gone through initial cycles, integrating and revising ESD skills and content in specifications as appropriate, and ensuring that all students, regardless of the level at which they engage with the course, have similarly comprehensive opportunities to encounter these skills and content.
- Provide ESD related content in its assessment support materials, e.g. in sample questions or in the online annotated examples of student work for relevant specifications.
- Carry out further research into the process of implementing curriculum specifications with an ESD focus, ensuring the inclusion of the voices of teachers, students and other stakeholders in the process.
- Consider more targeted approaches to involving ESD stakeholders in reviews and consultations.
- Continue as an active participant on the advisory panel for the National Strategy on Education for Sustainable Development and encourage the development of a follow-on strategy from 2020.

Curriculum review/reform is an ongoing, constantly evolving and contested task, and every effort to ensure an ESD-focused and future-orientated curriculum must be characterised by determination to equip young people with the knowledge, skills and attitudes they will need to meet and overcome the sustainability challenges facing our world.

> *Across the developed and the developing world schooling finds itself at the centre of a set of global concerns about the future of the planet, about food and water security, and about the movement of peoples in the face of climate disasters….and increasingly, schools are being asked not simply to teach students about these issues but to shape the next generation of creative problem solvers who can quite literally 'save the world'* (NCCA, 2010b).

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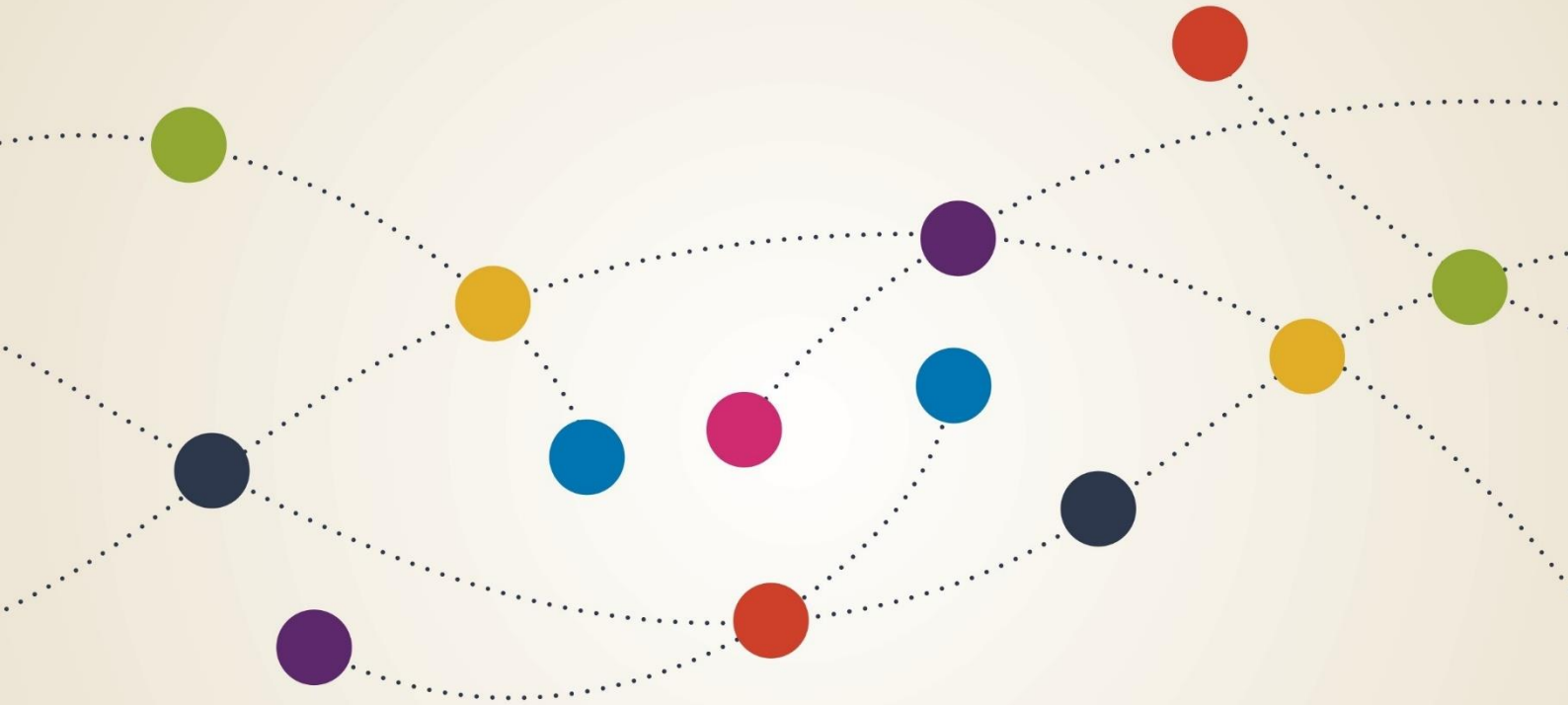

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An Chomhairle Náisiúnta Curaclaim agus Measúnachta
National Council for Curriculum and Assessment

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